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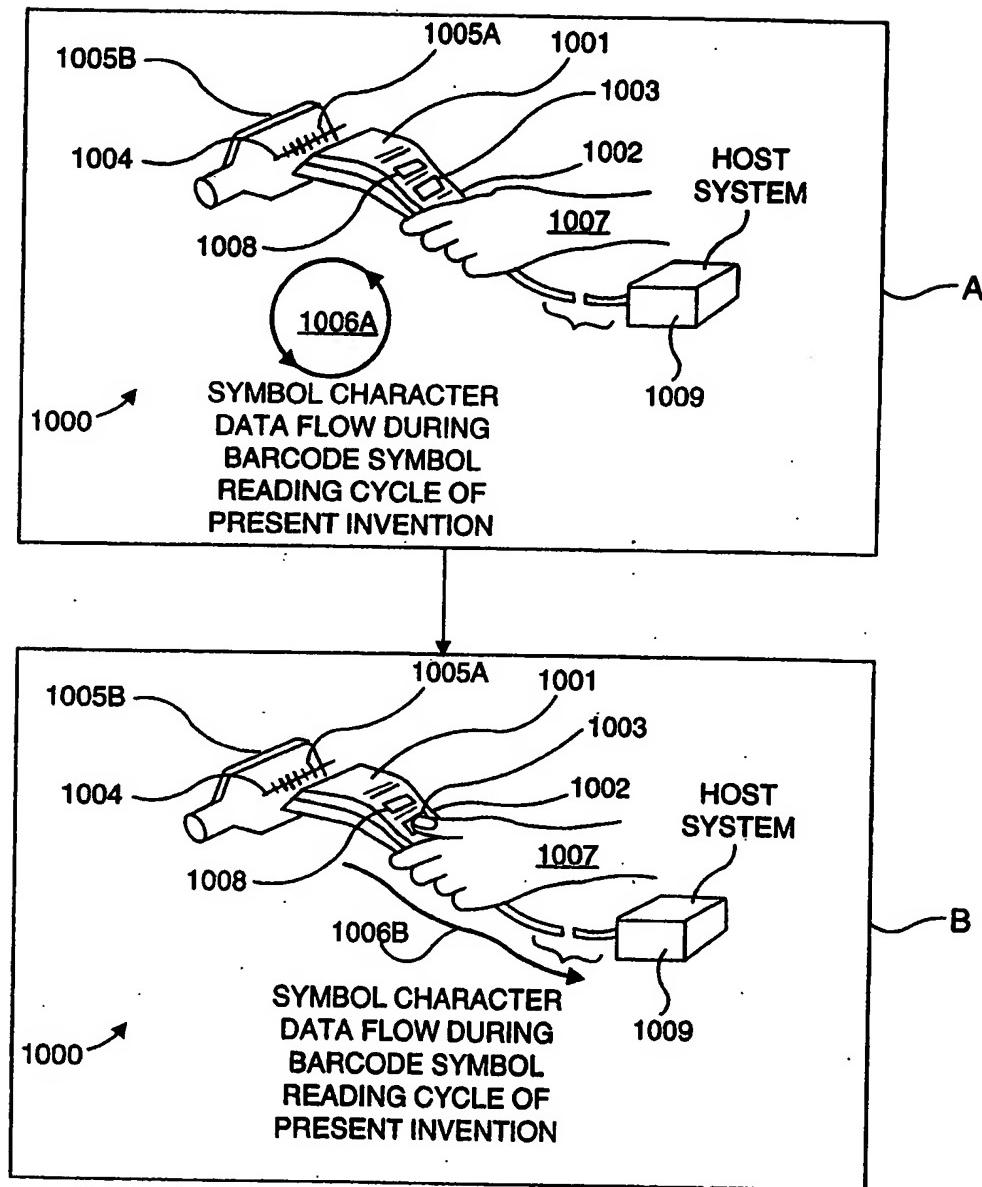


FIG. 1

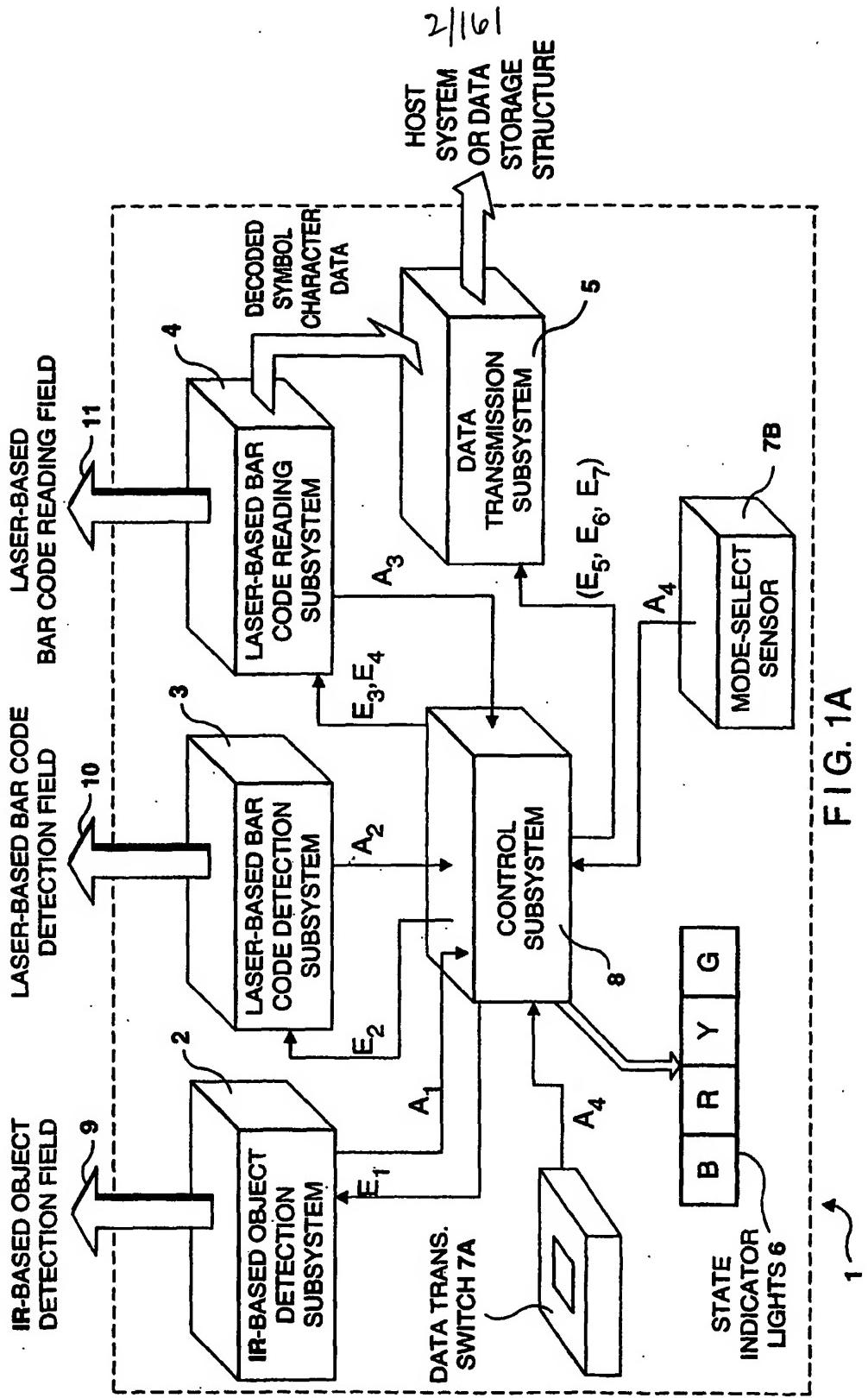


FIG. 1A

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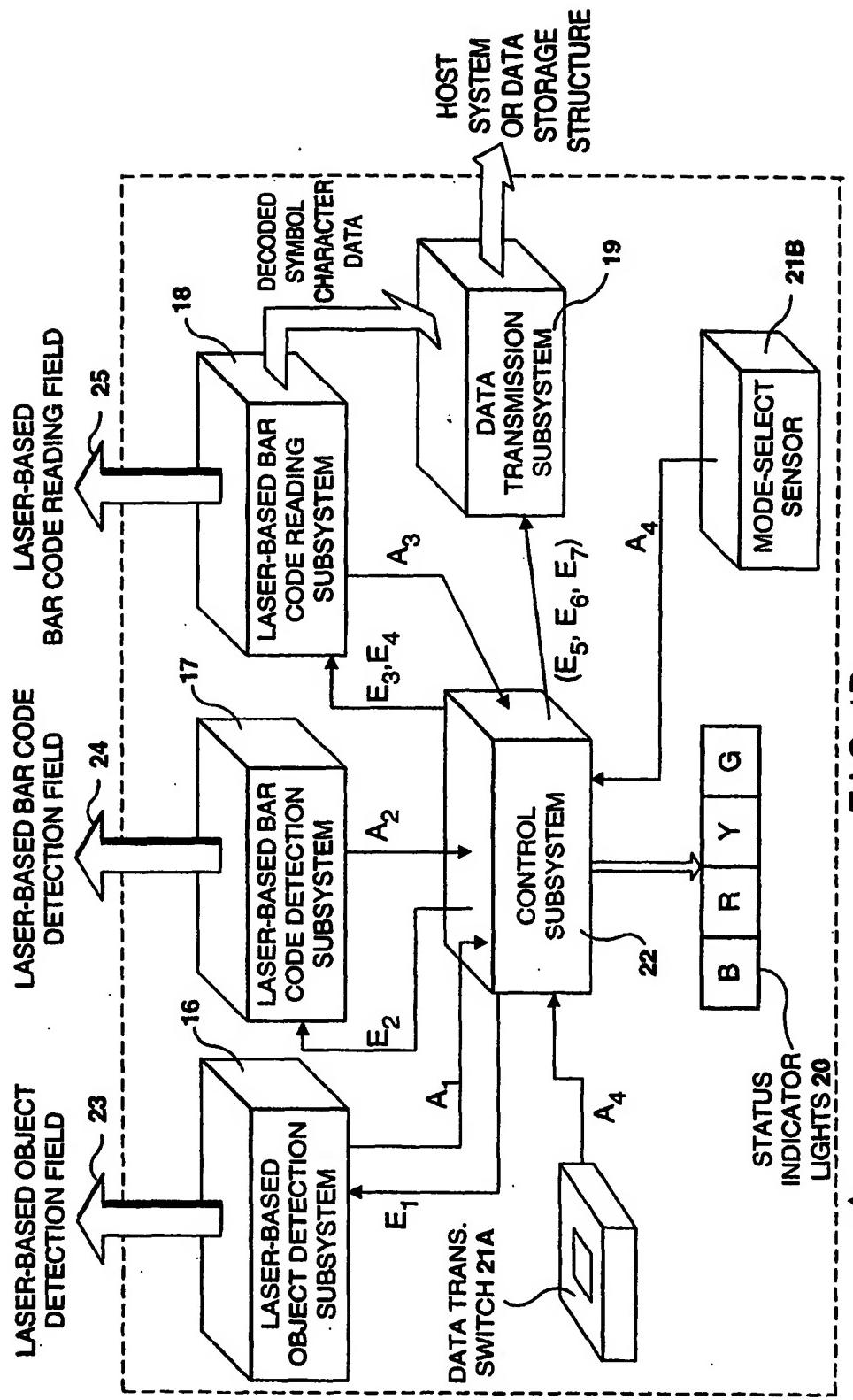


FIG. 1B

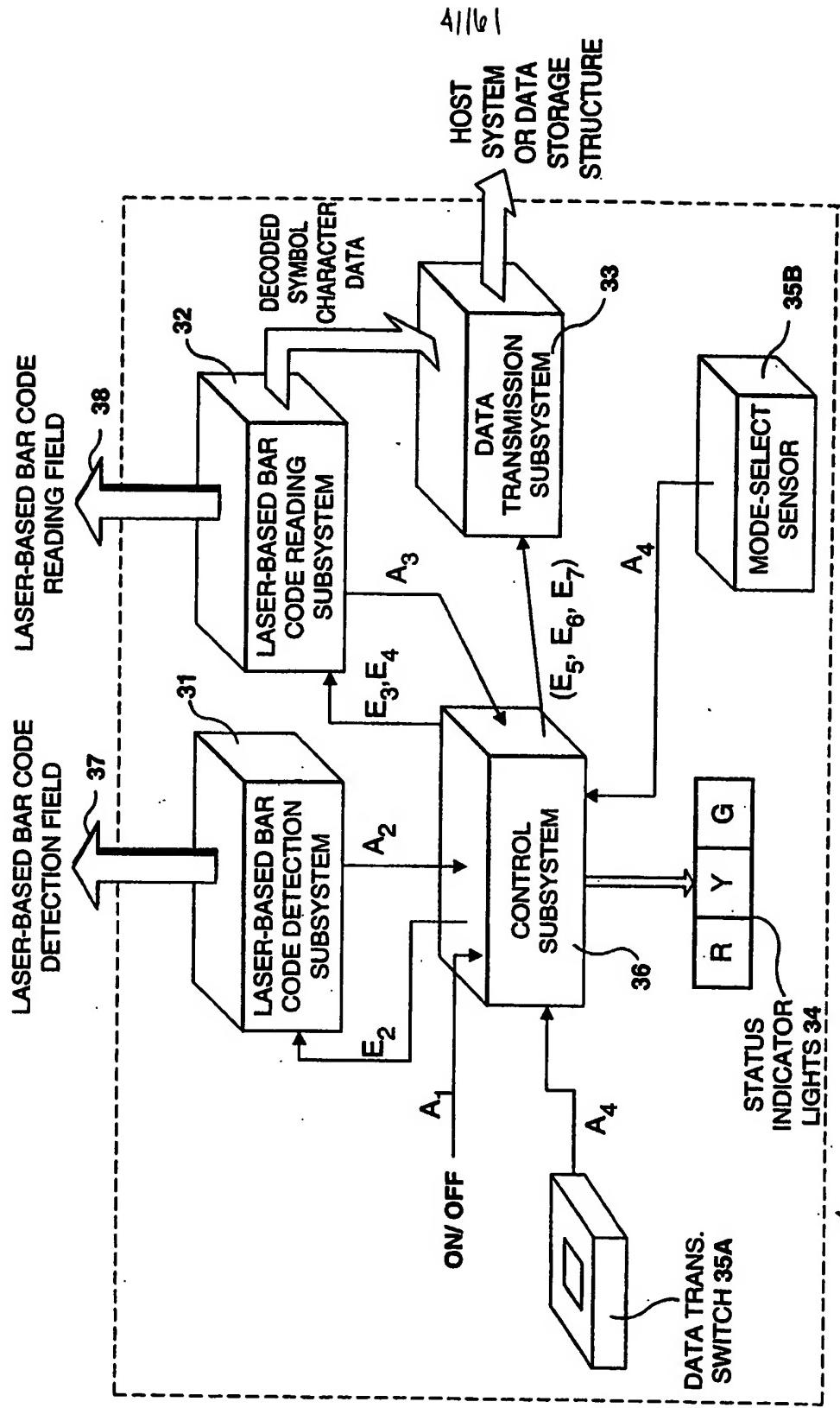


FIG. 1C

30 ~

5 [16]

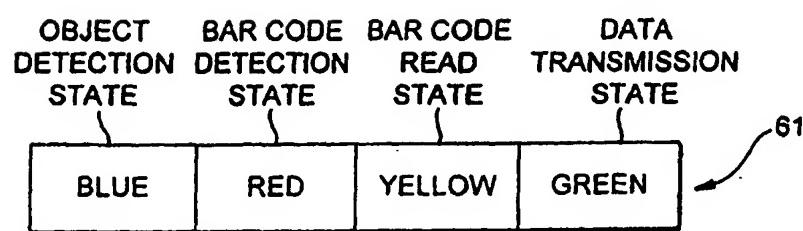
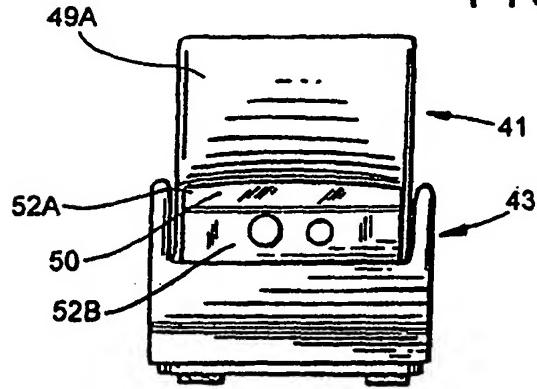
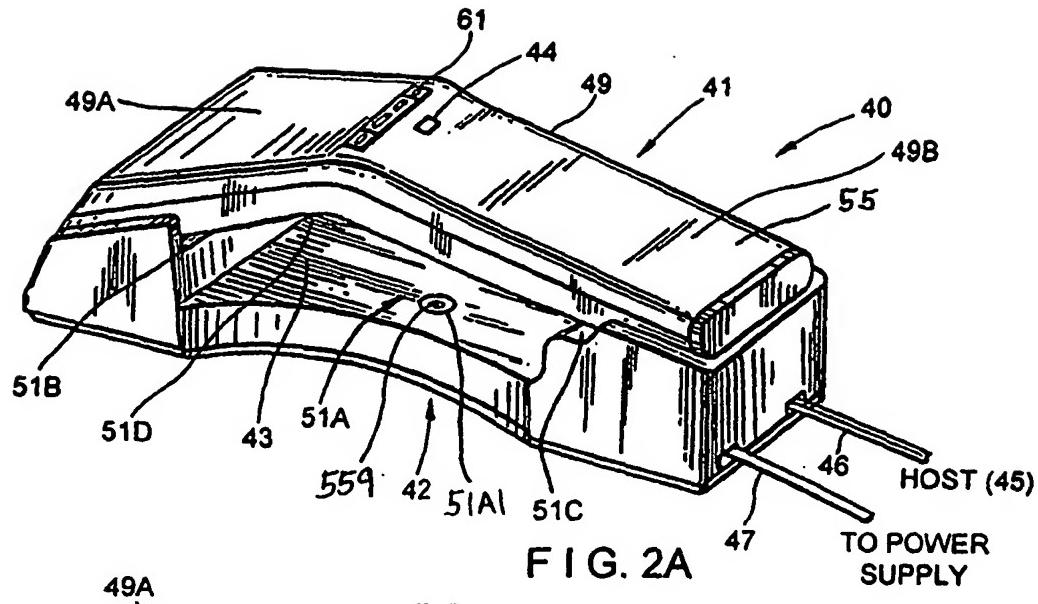
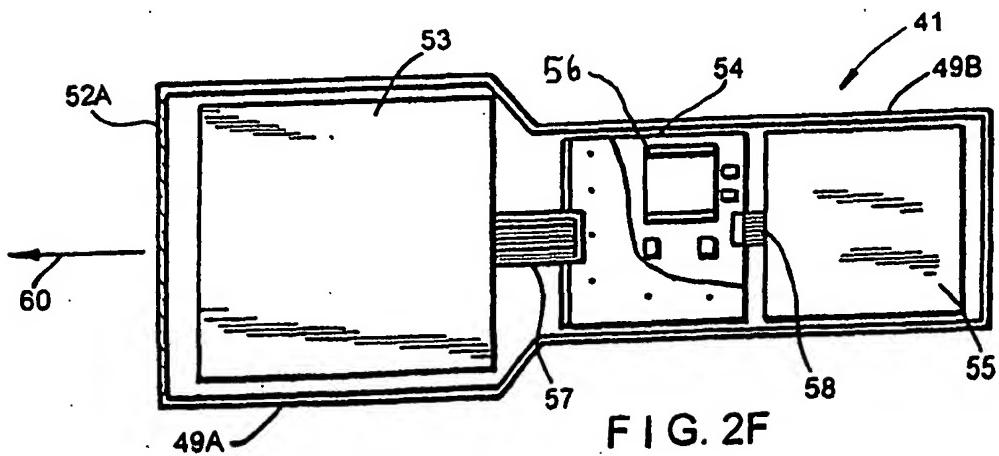
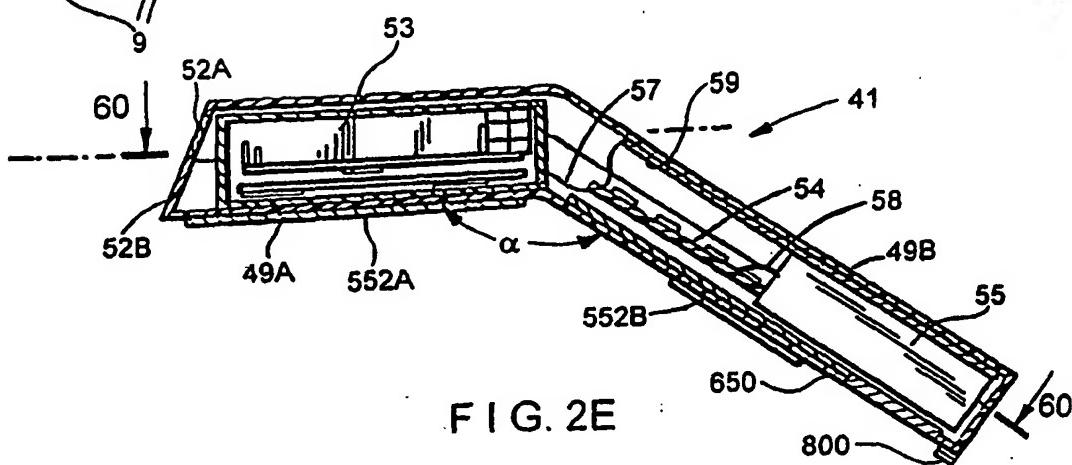
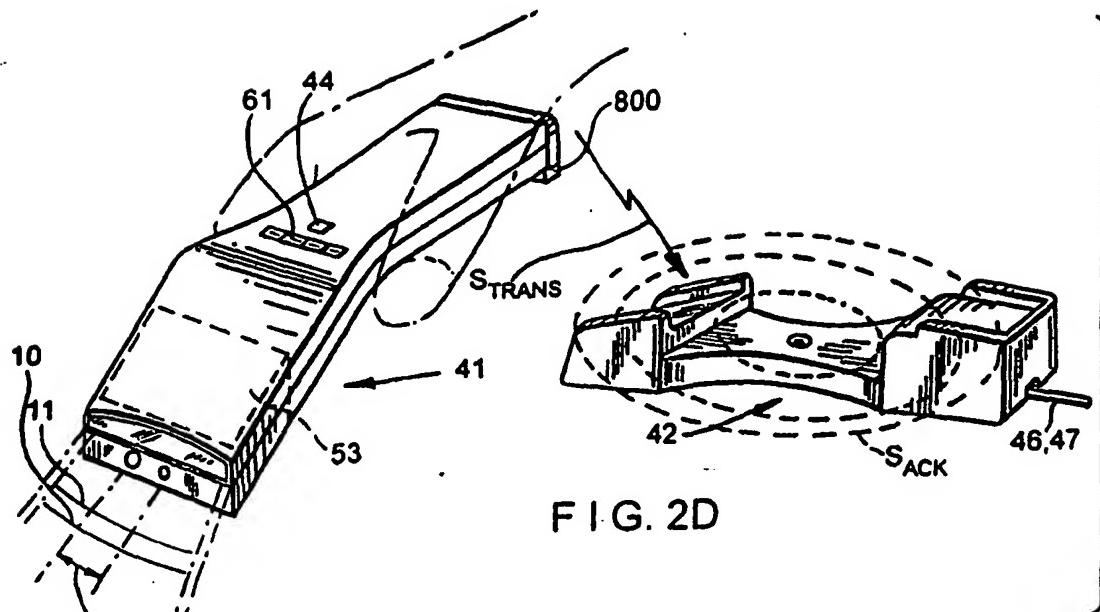


FIG. 2C

6(16)



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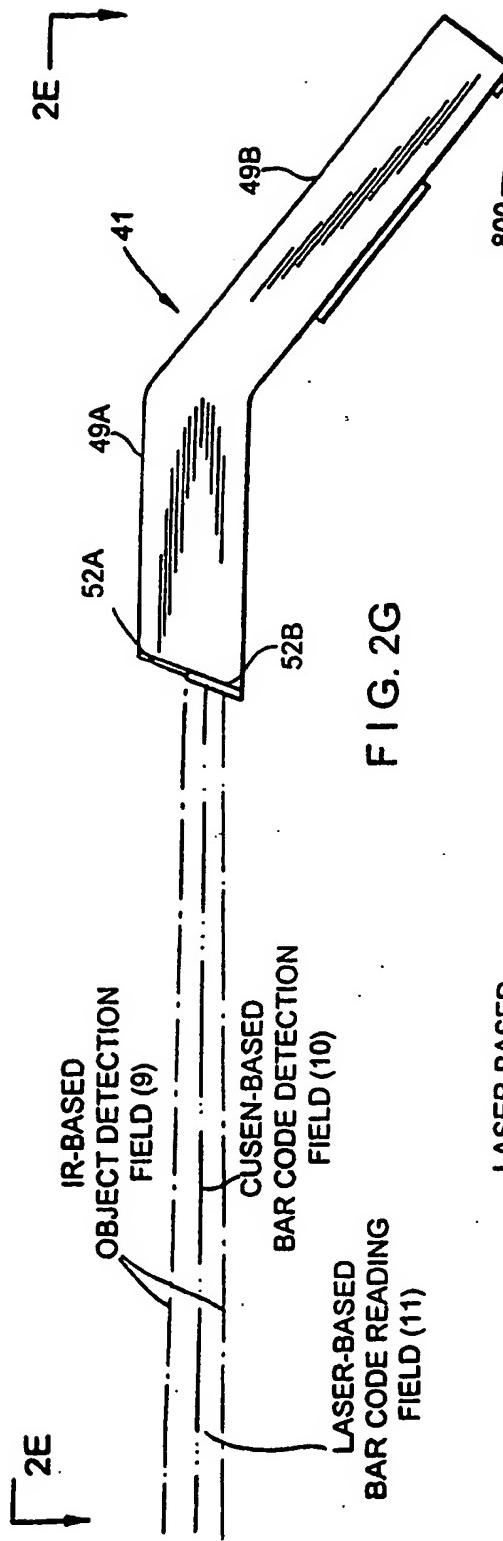


FIG. 2G

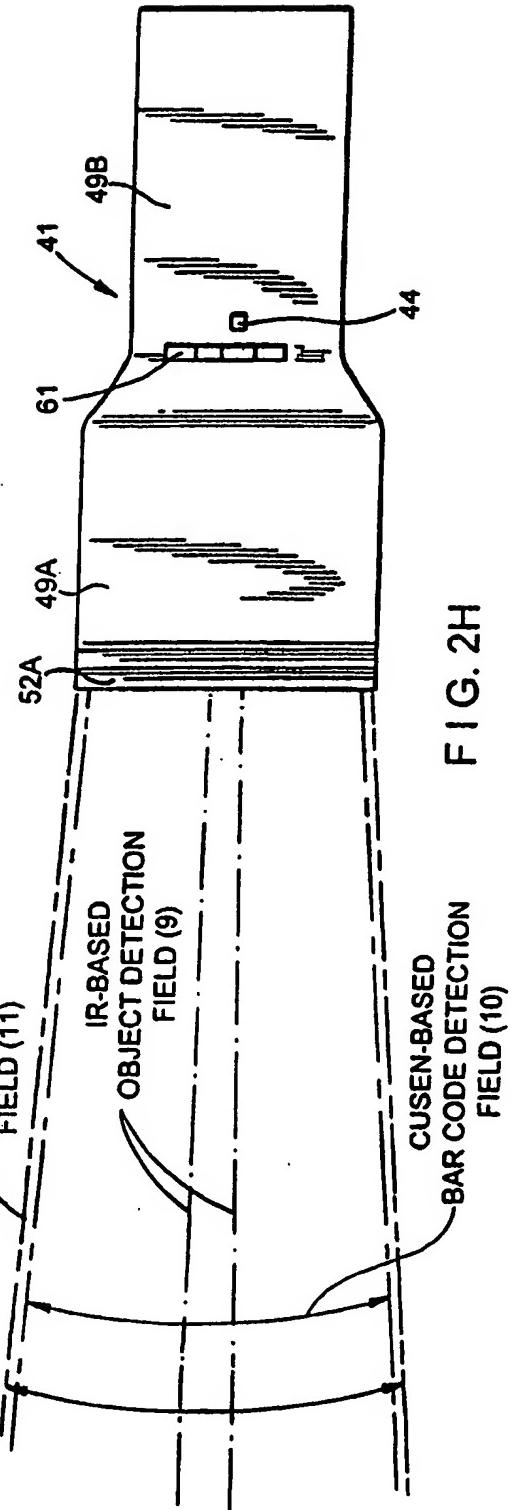


FIG. 2H

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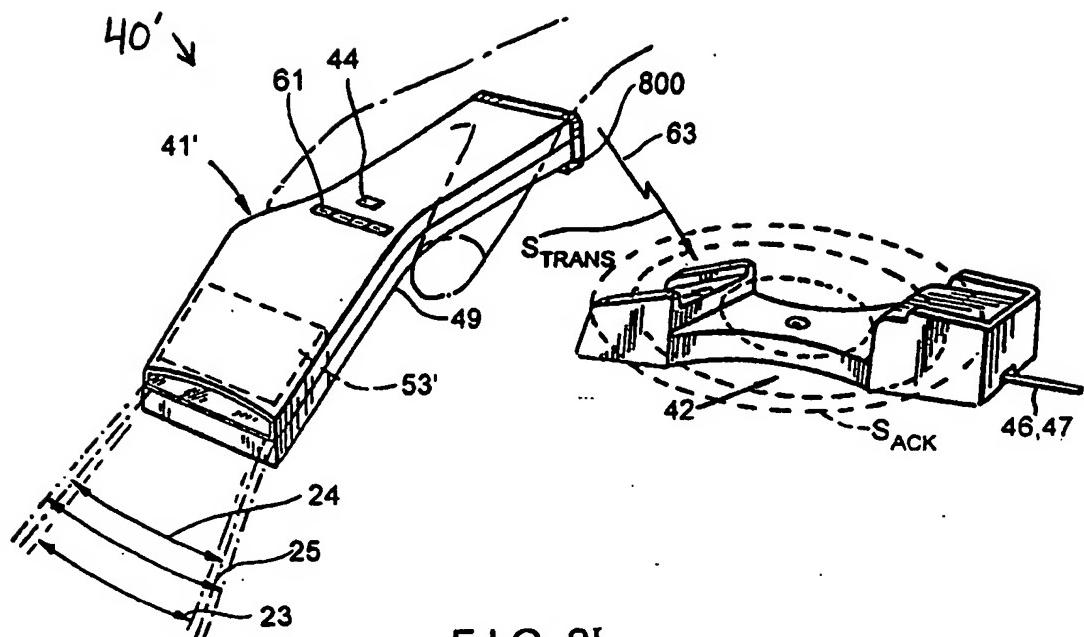


FIG. 2I

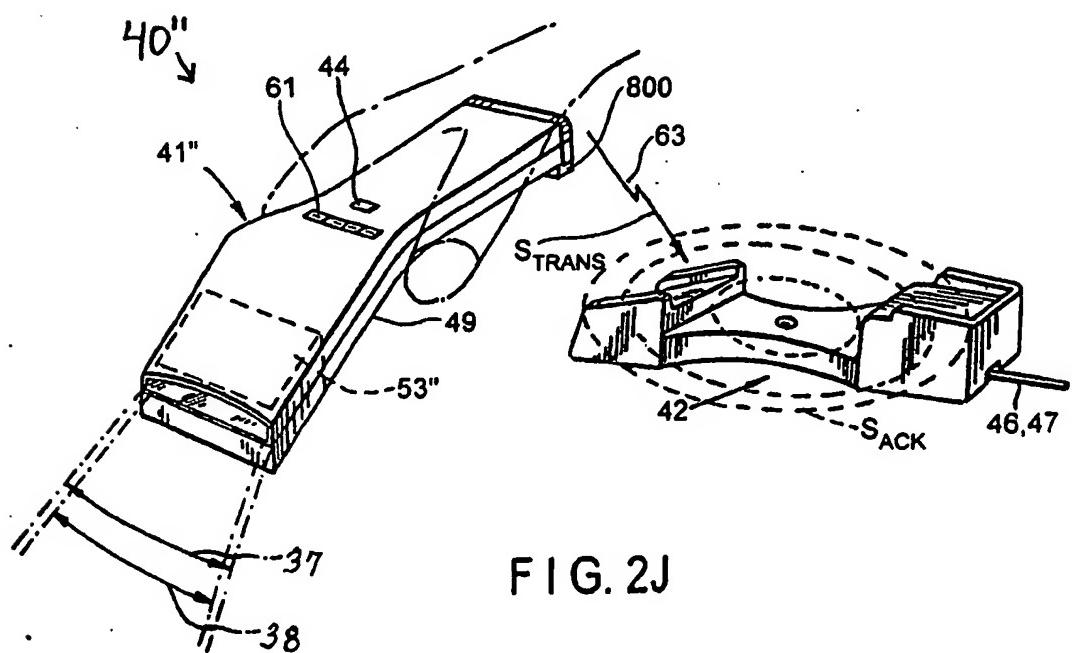
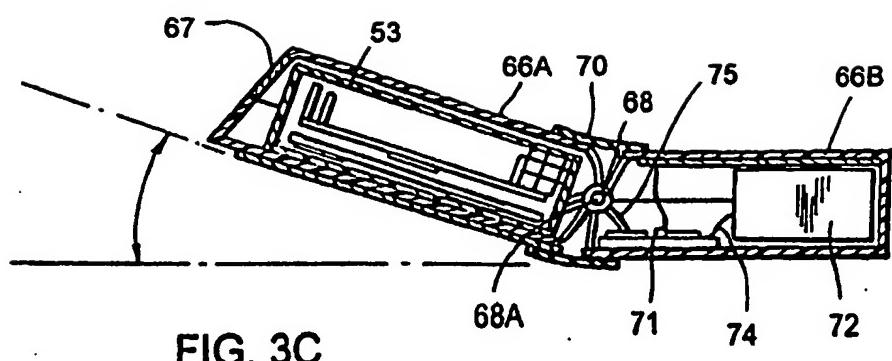
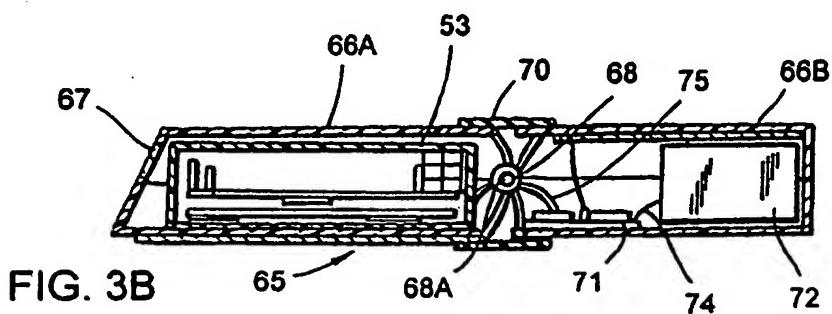
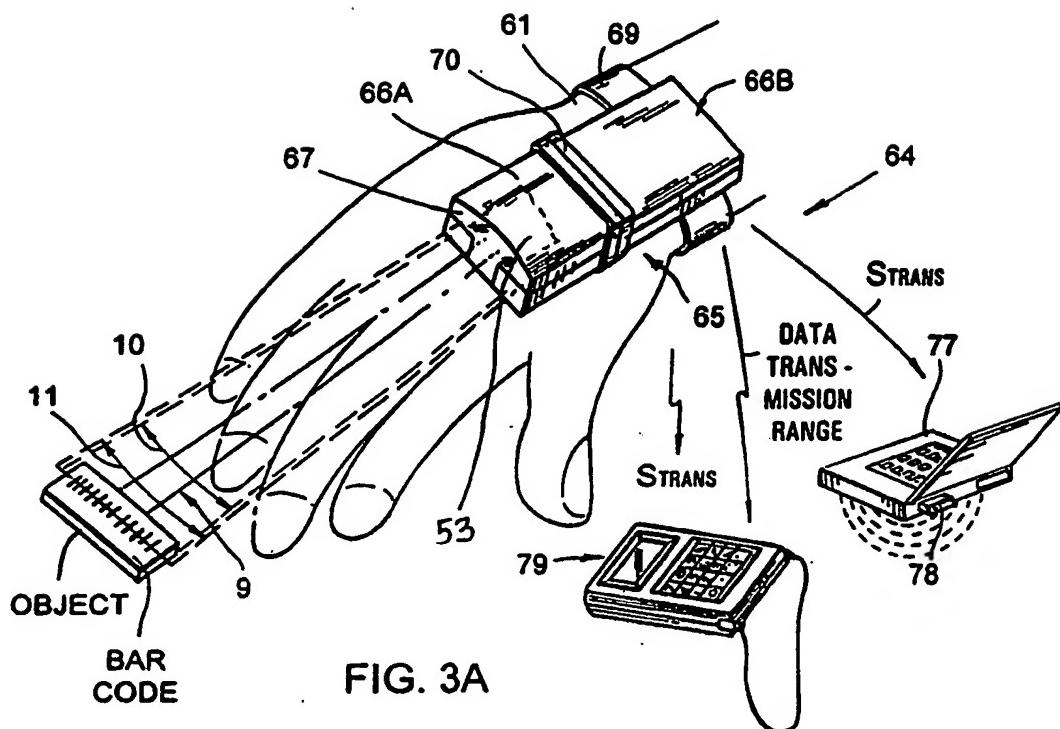


FIG. 2J

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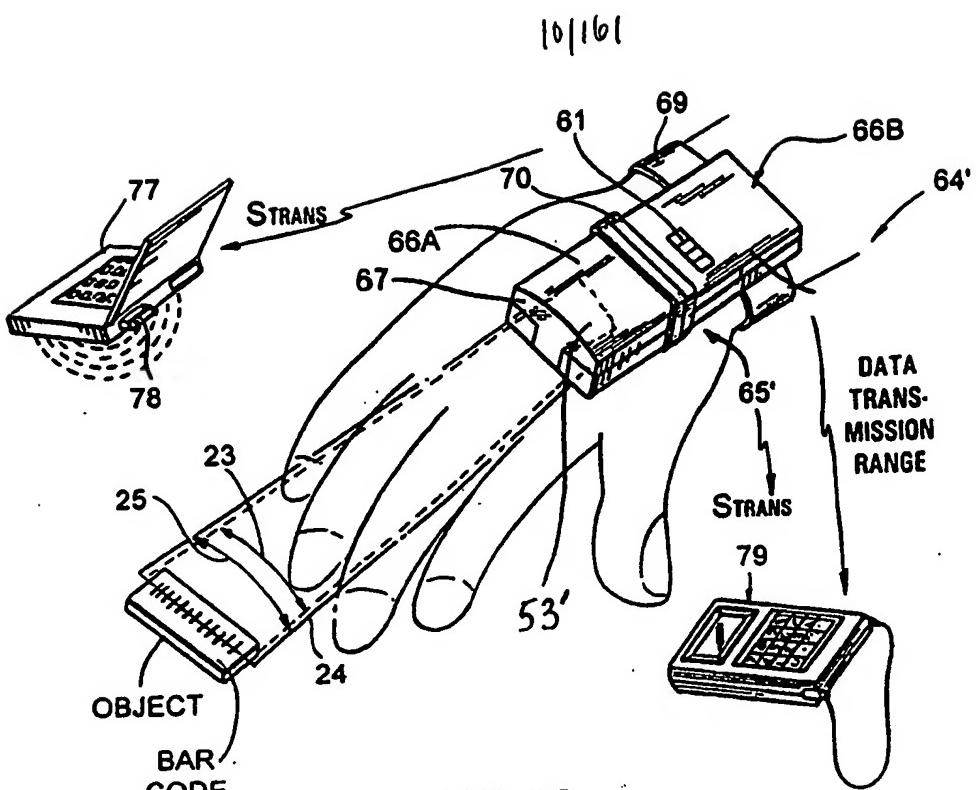


FIG. 3D

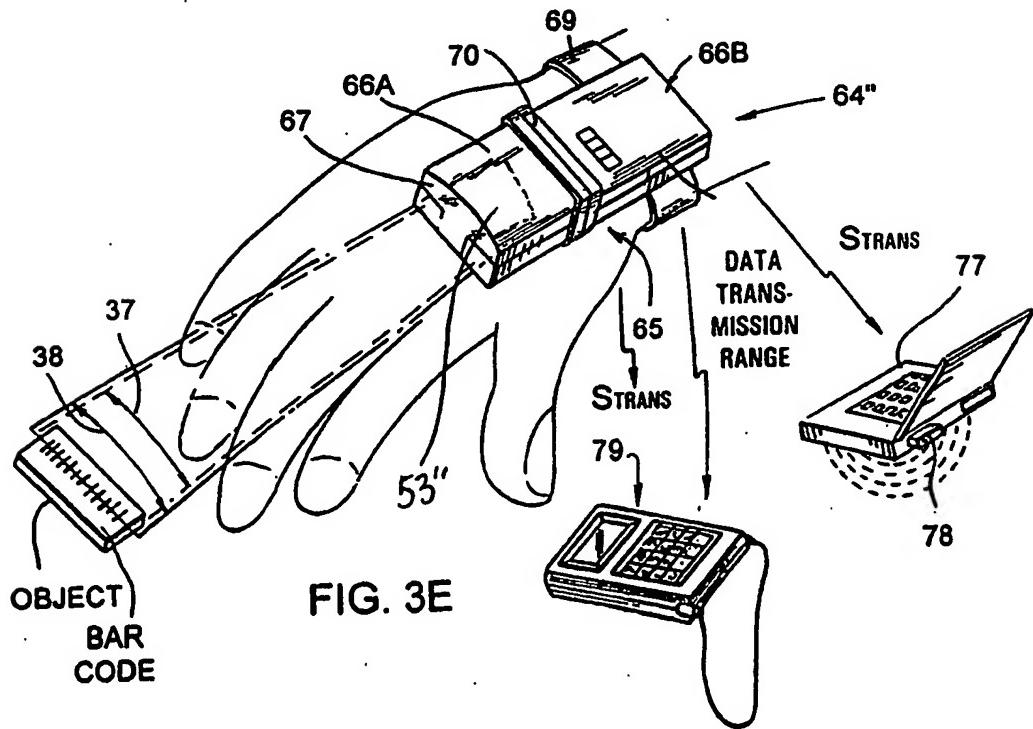


FIG. 3E

111(16)

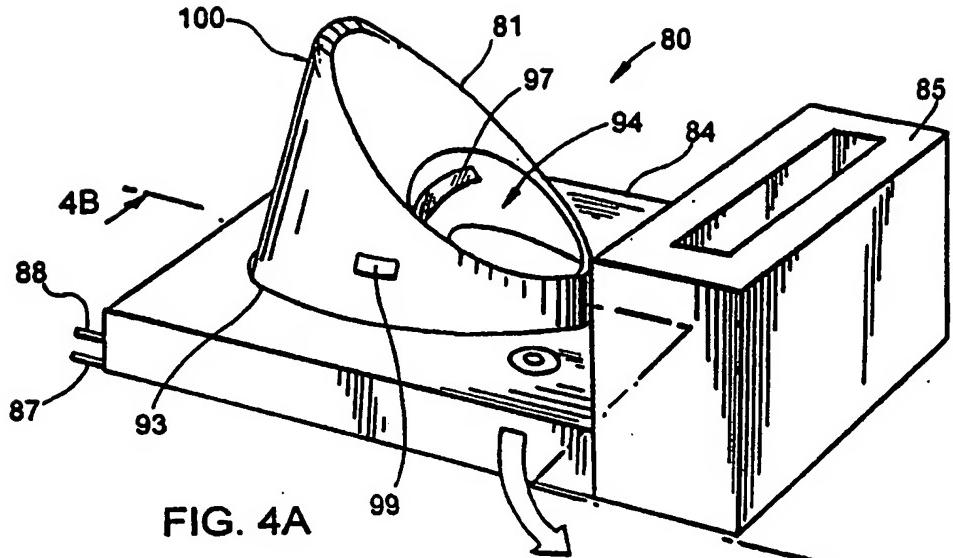


FIG. 4A

KEYBOARD

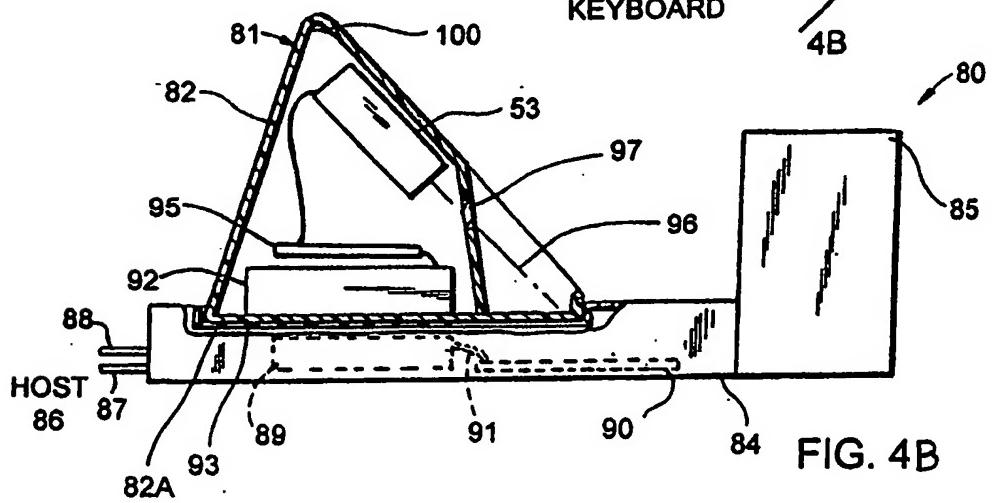


FIG. 4B

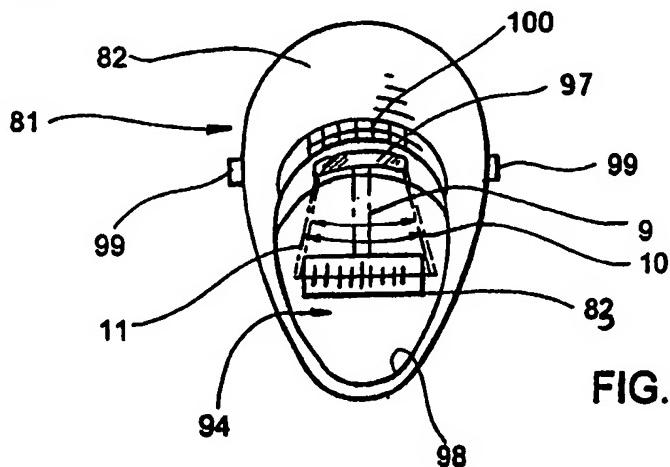
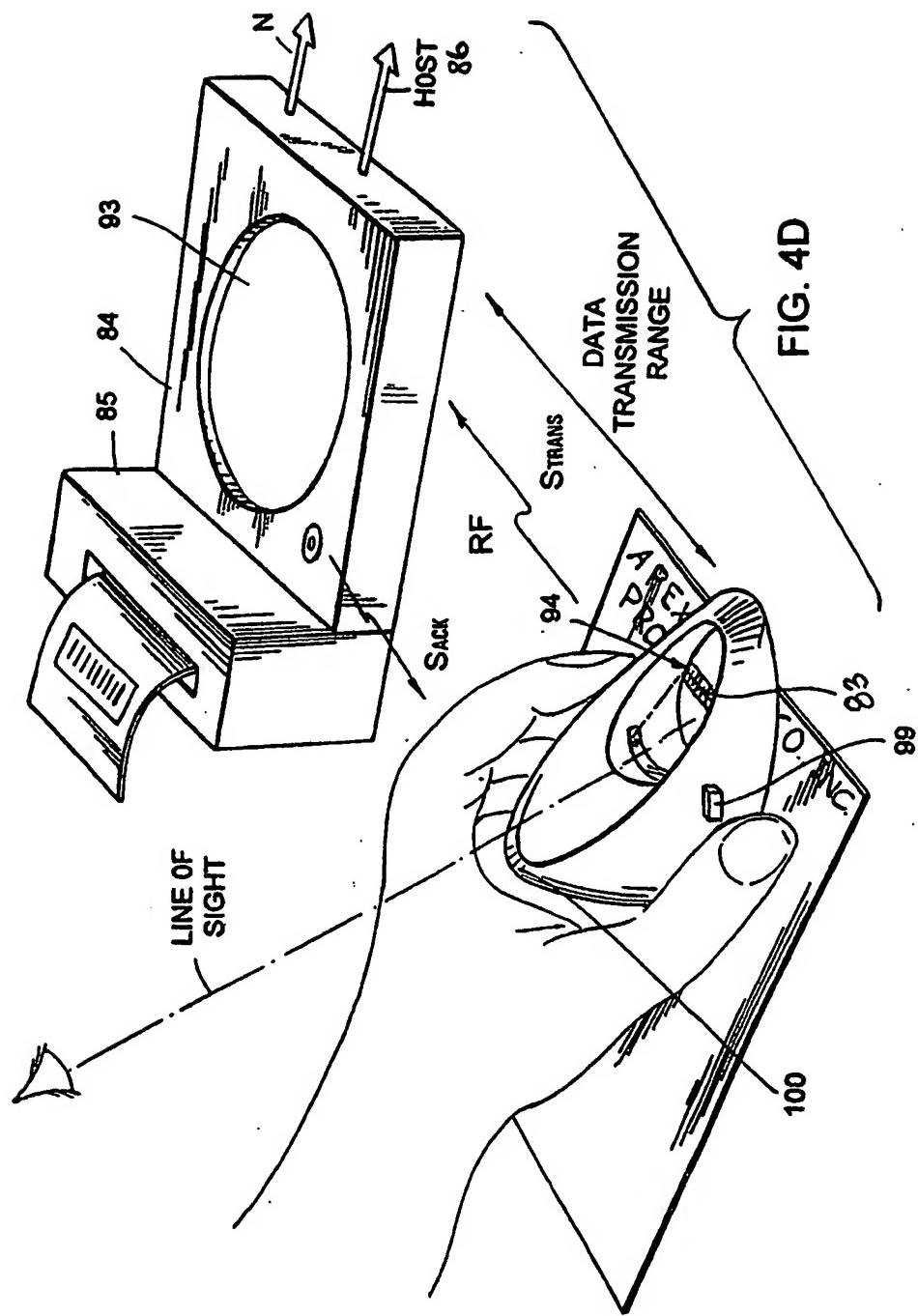


FIG. 4C

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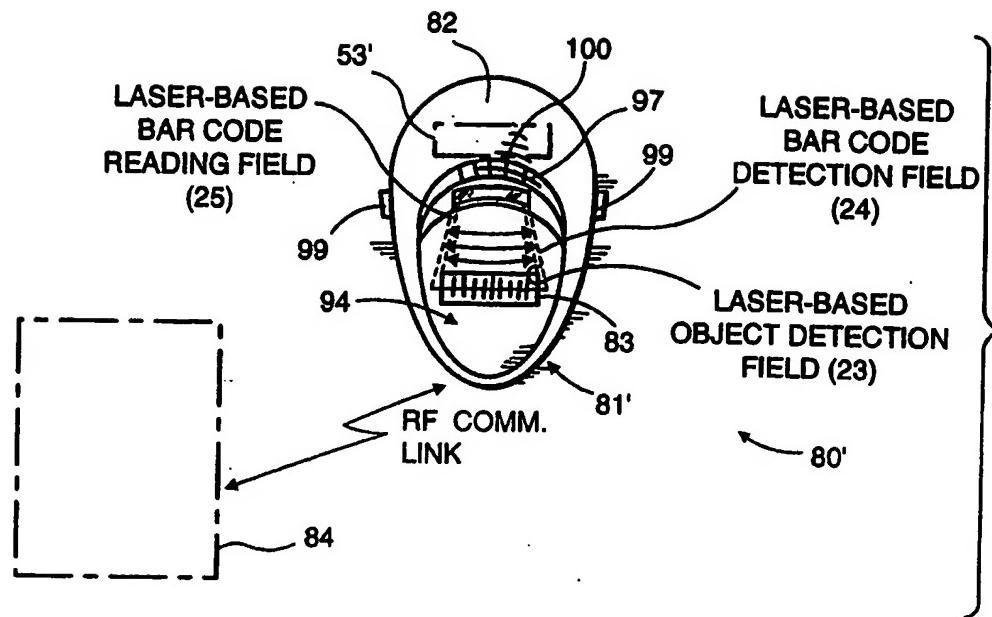


FIG. 4E

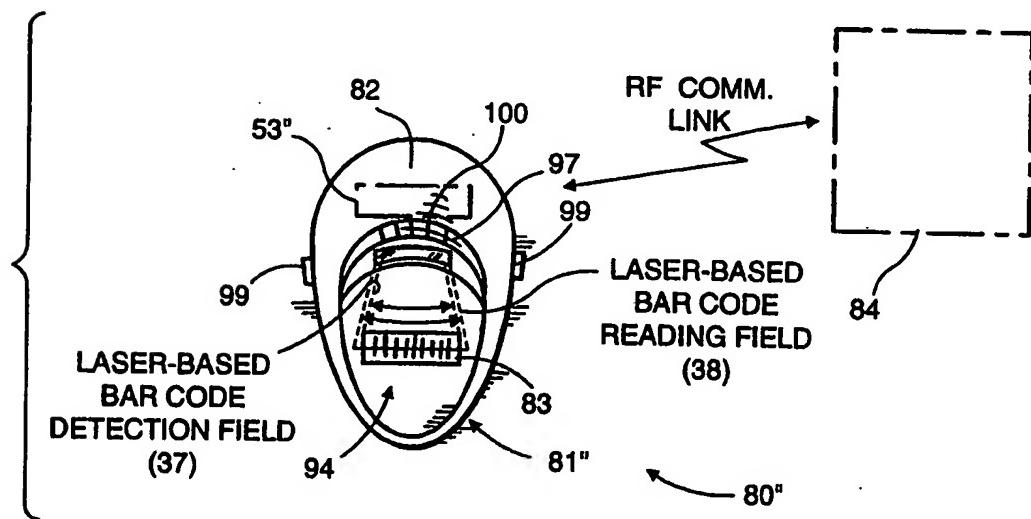


FIG. 4F

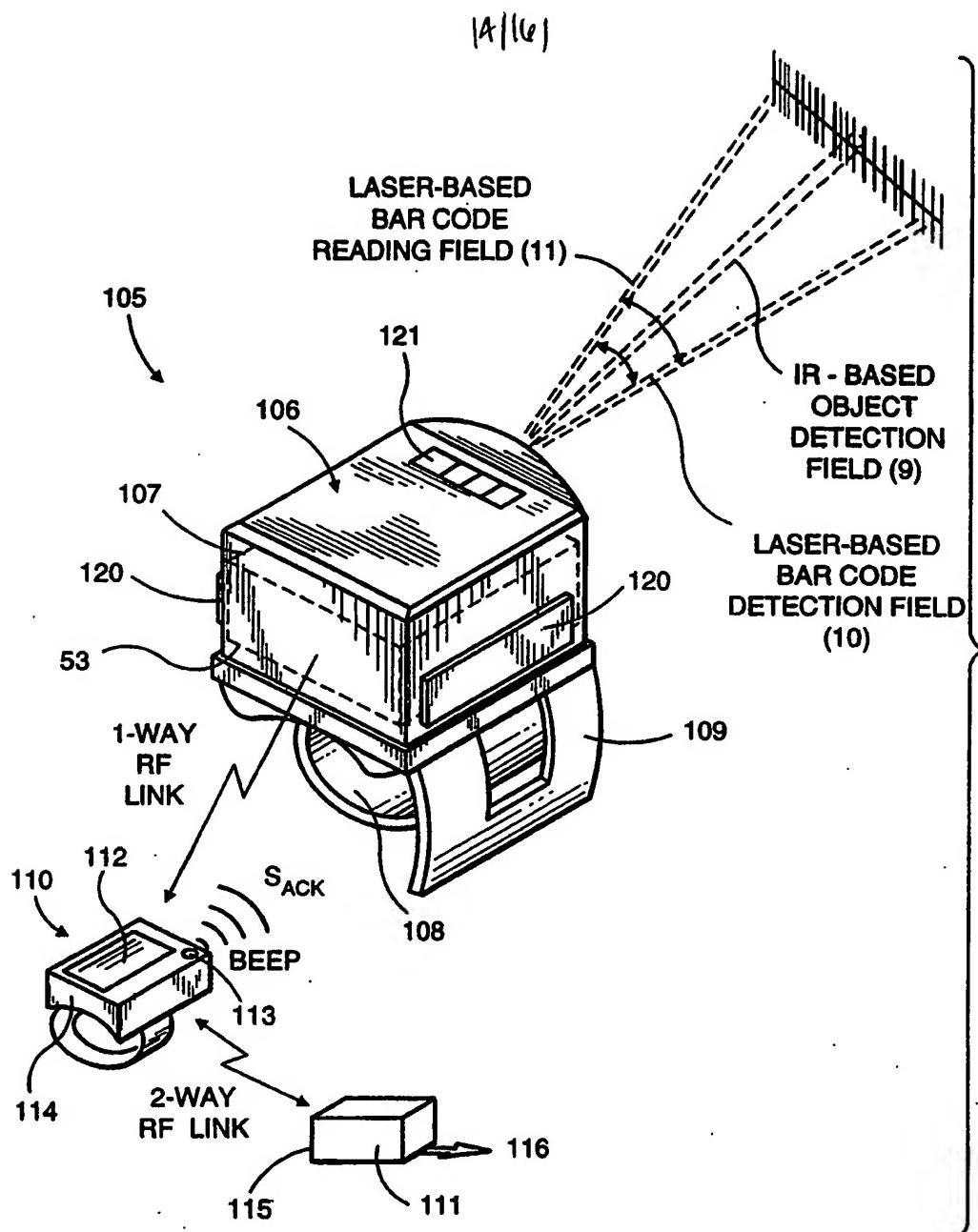


FIG. 5A

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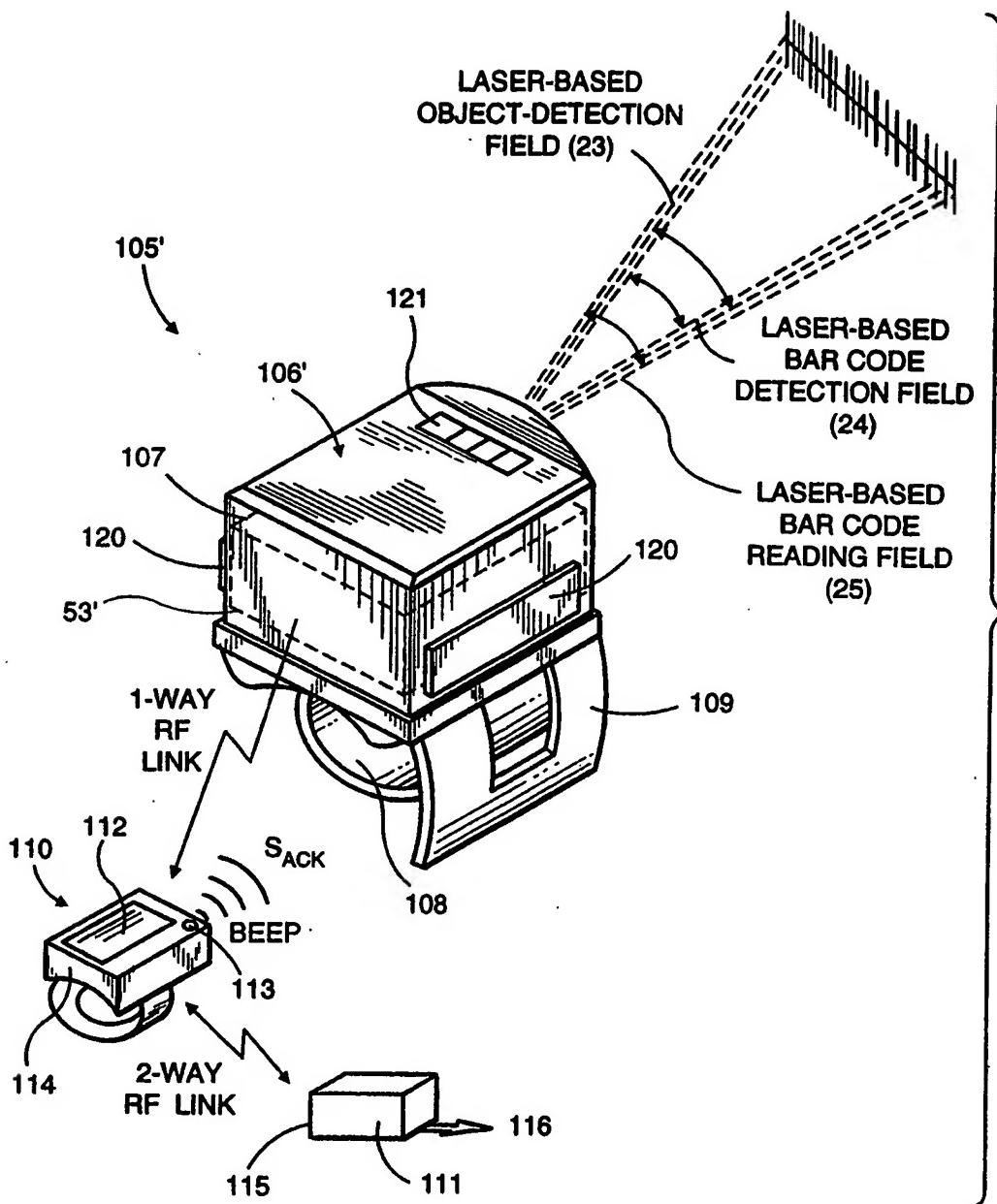


FIG. 5B

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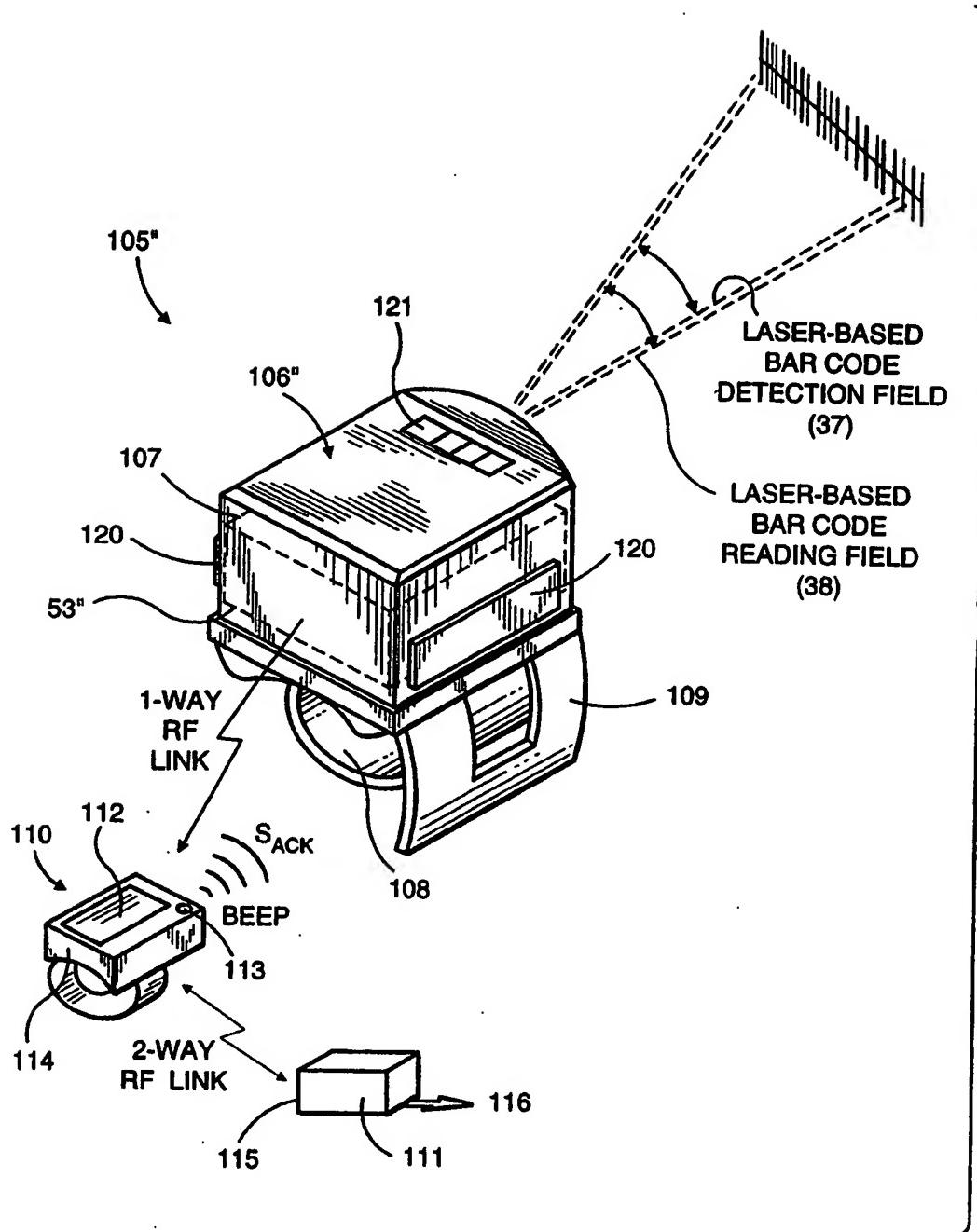


FIG. 5C

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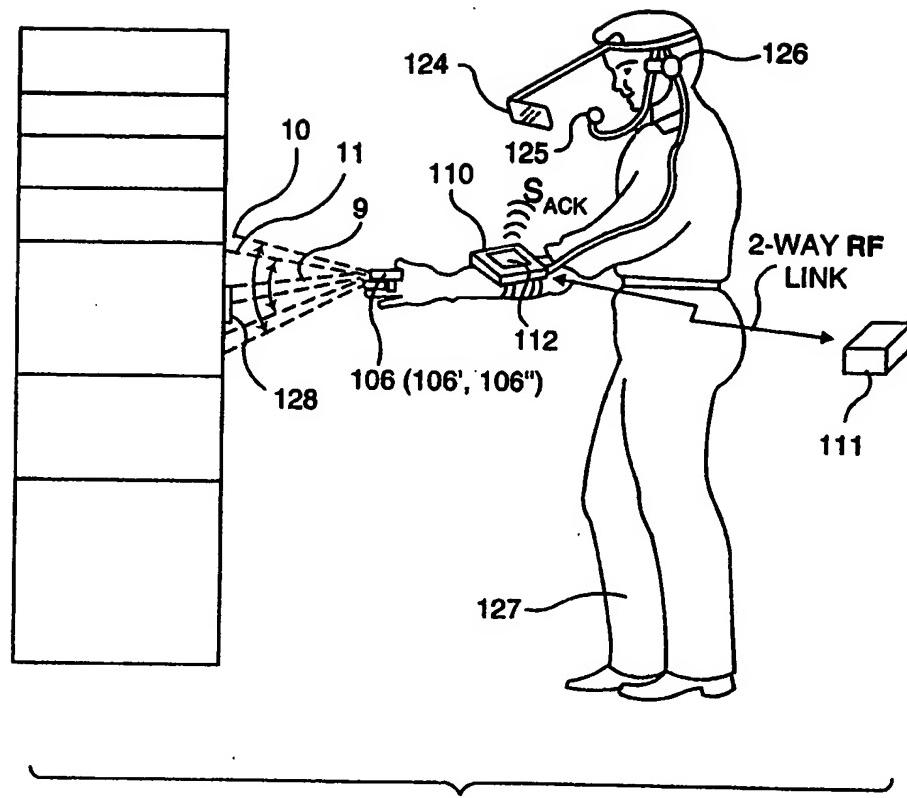


FIG. 5D

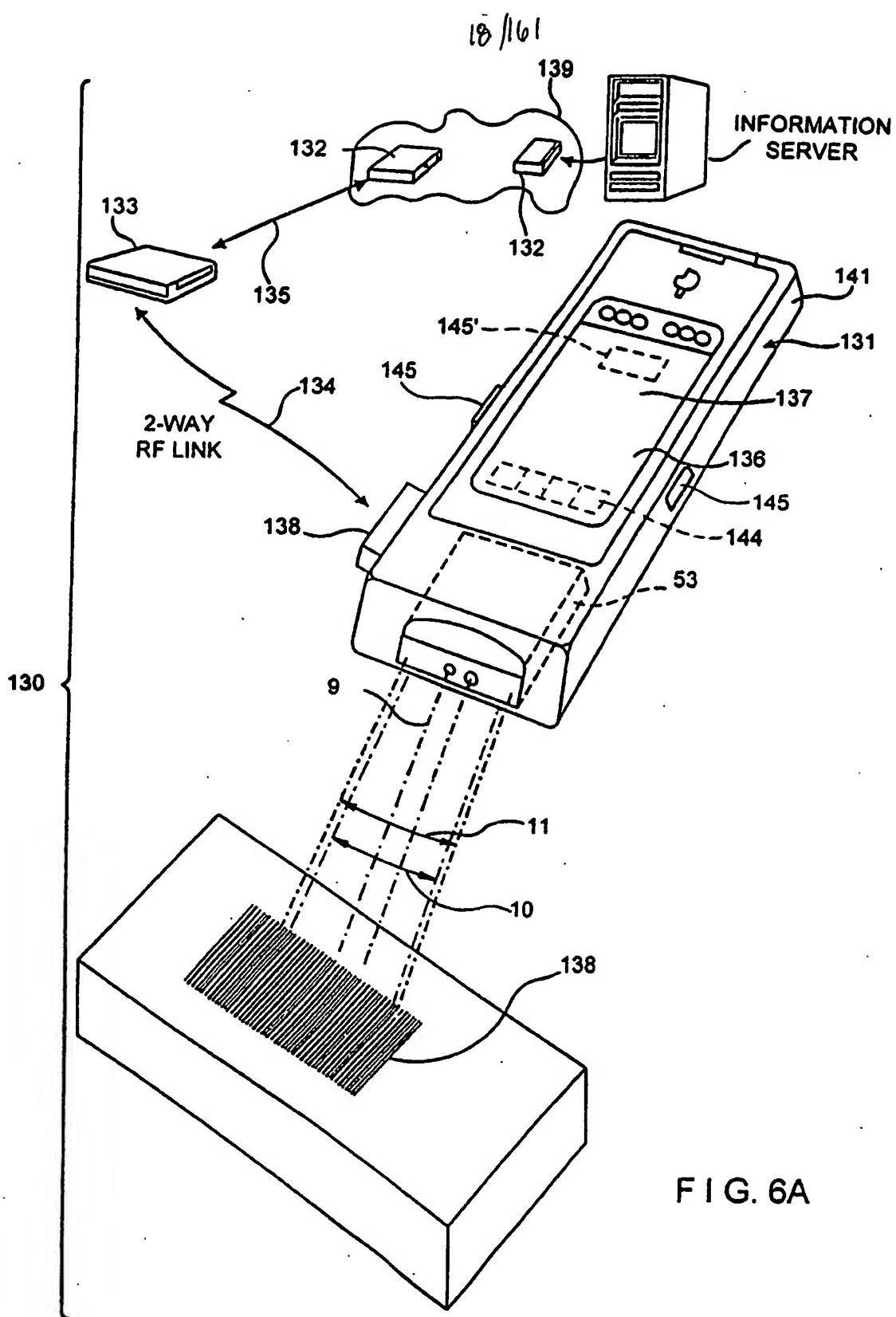
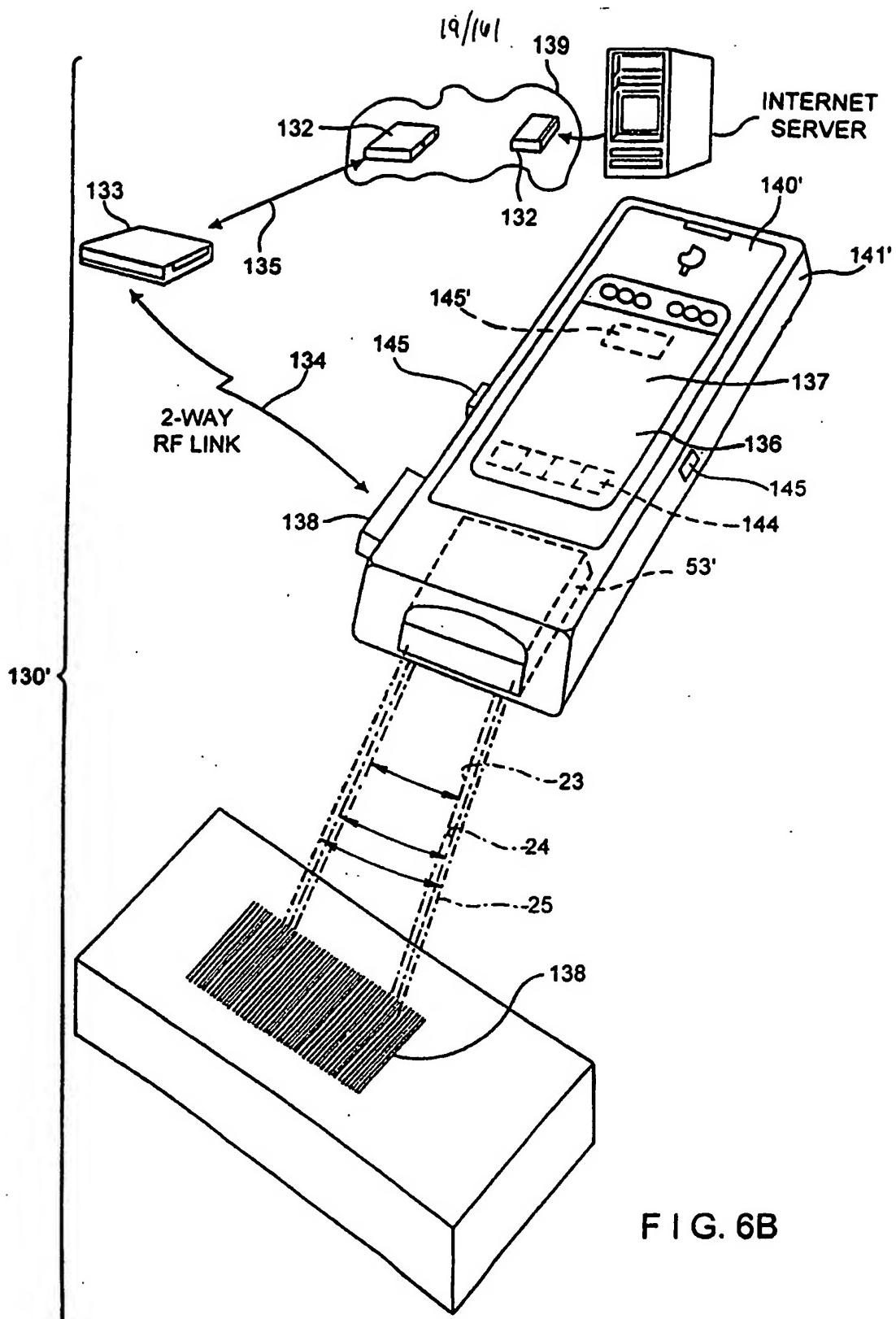


FIG. 6A



F I G. 6B

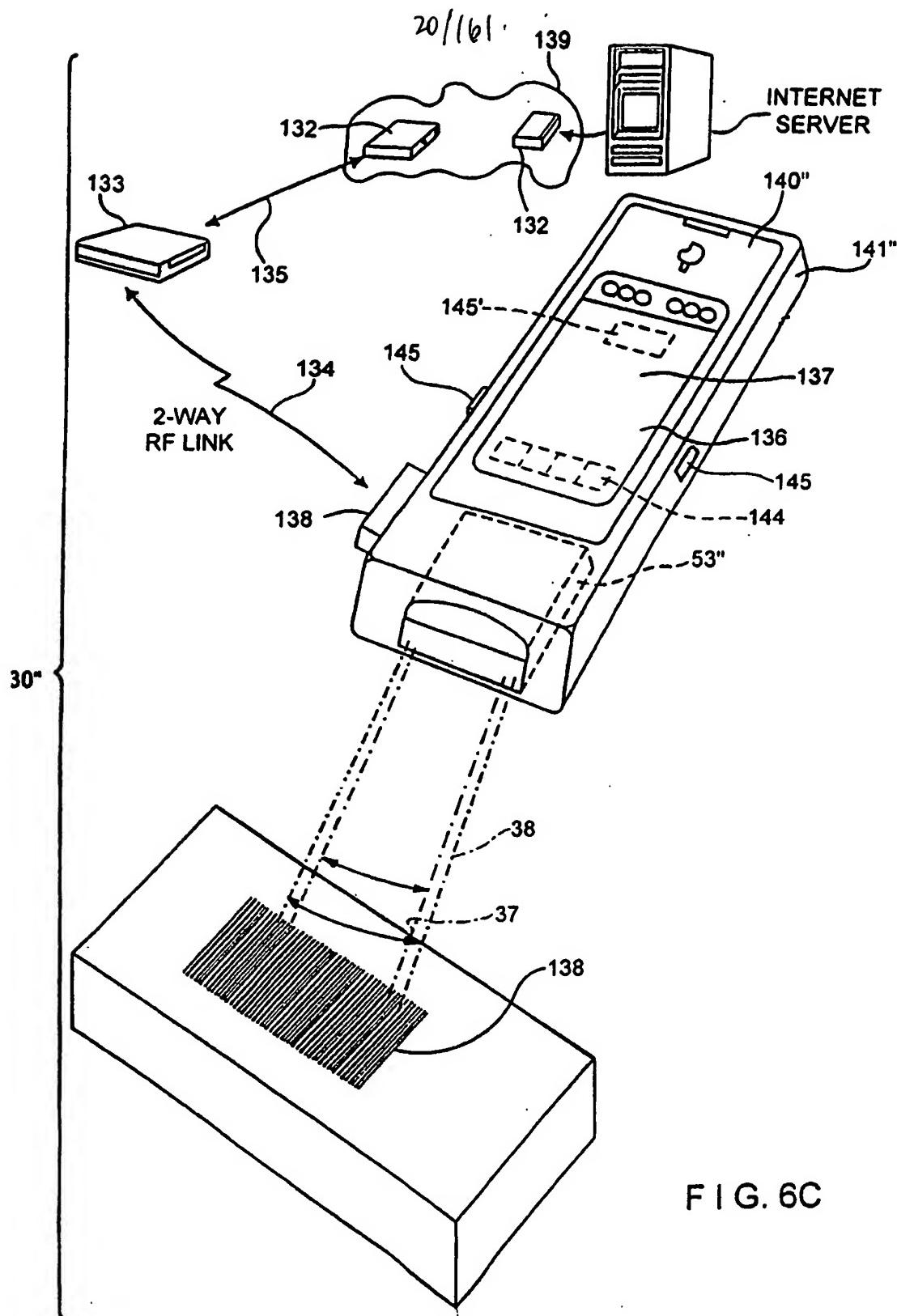


FIG. 6C

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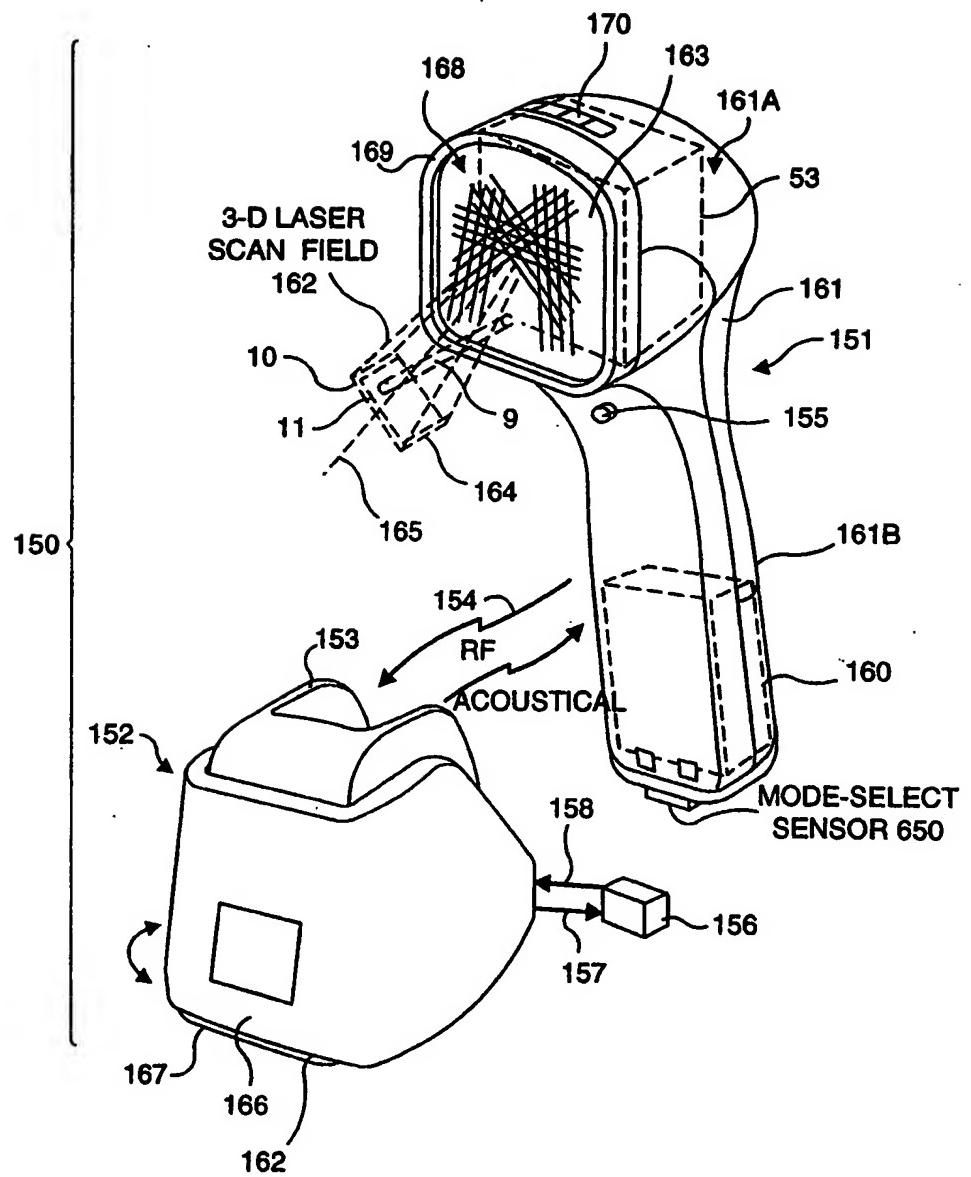


FIG. 7A

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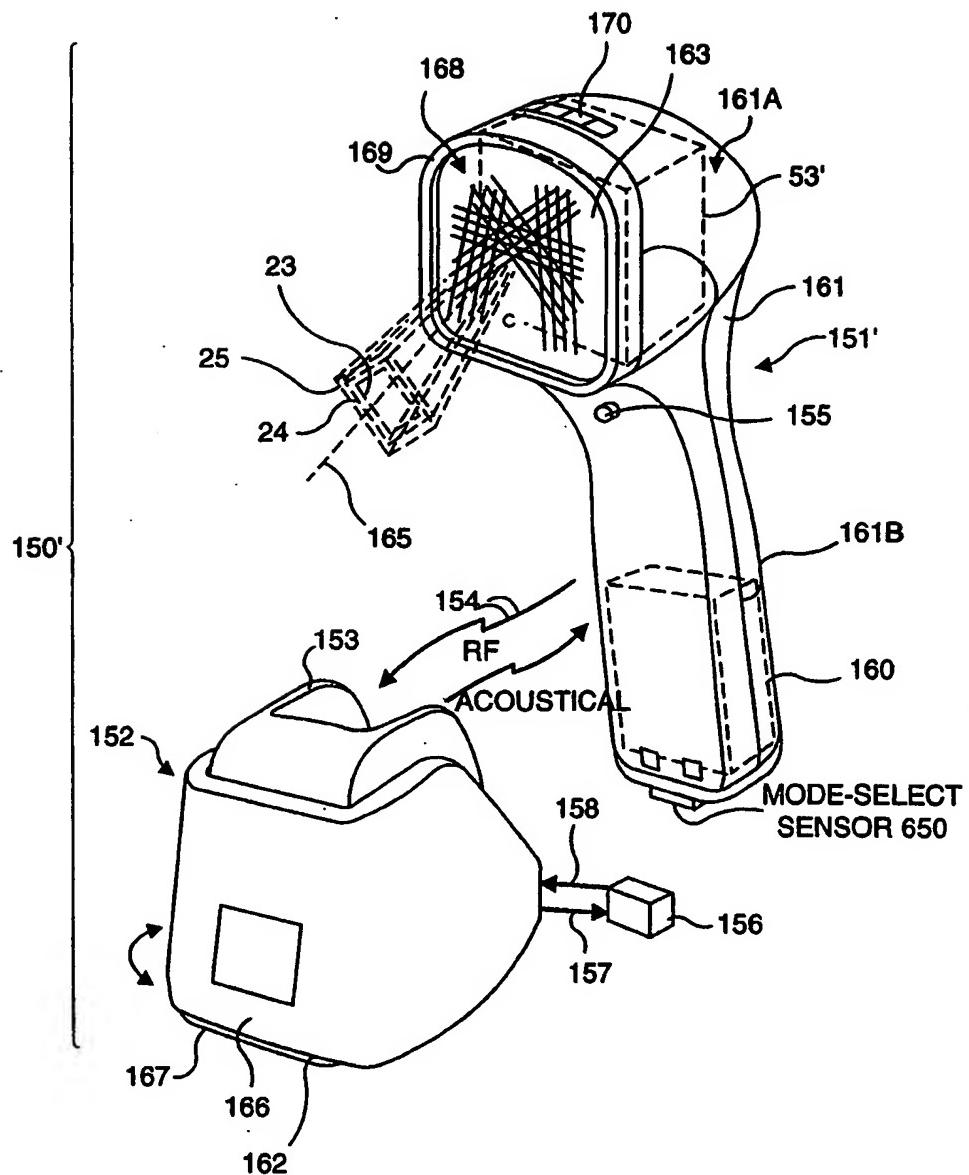


FIG. 7B

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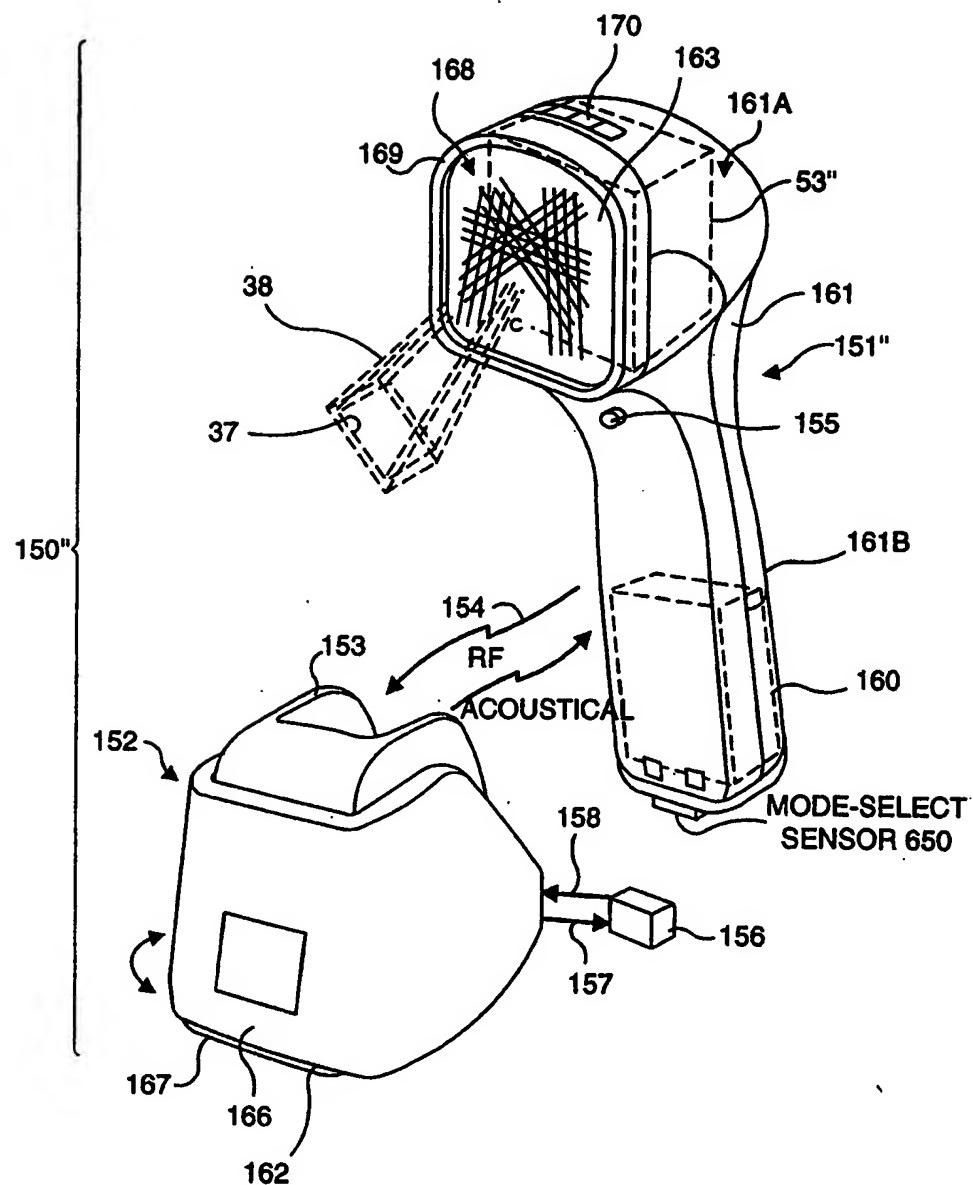


FIG. 7C

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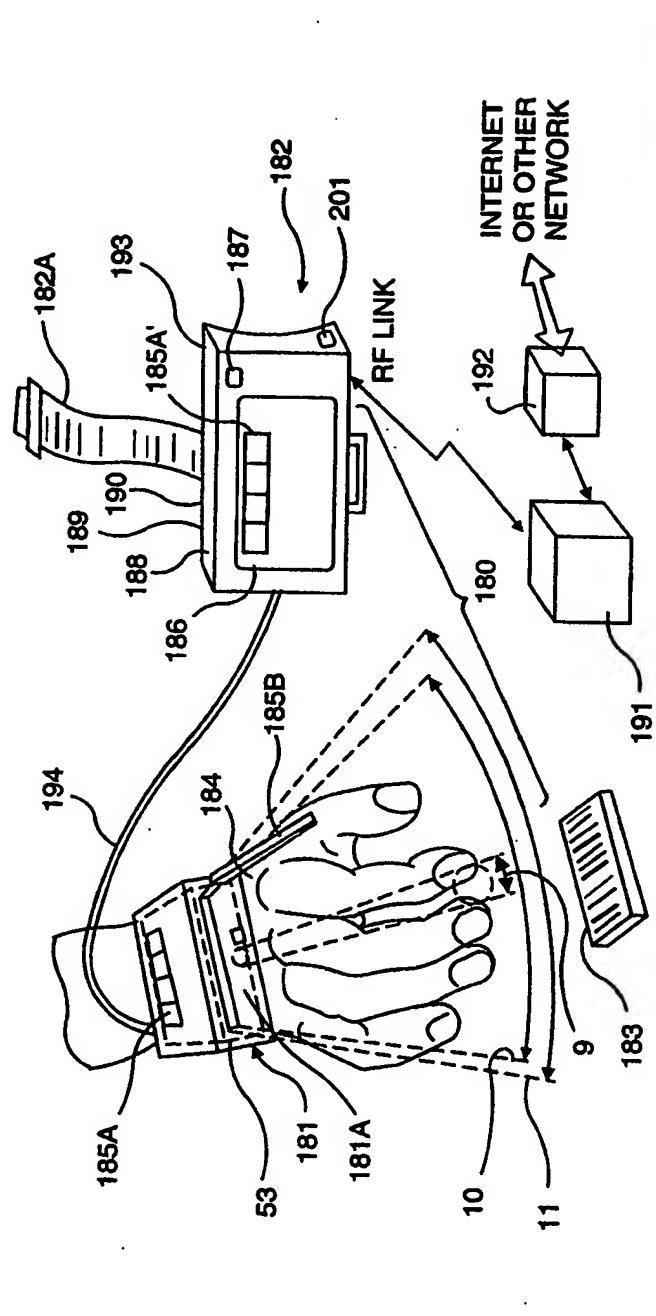


FIG. 8A

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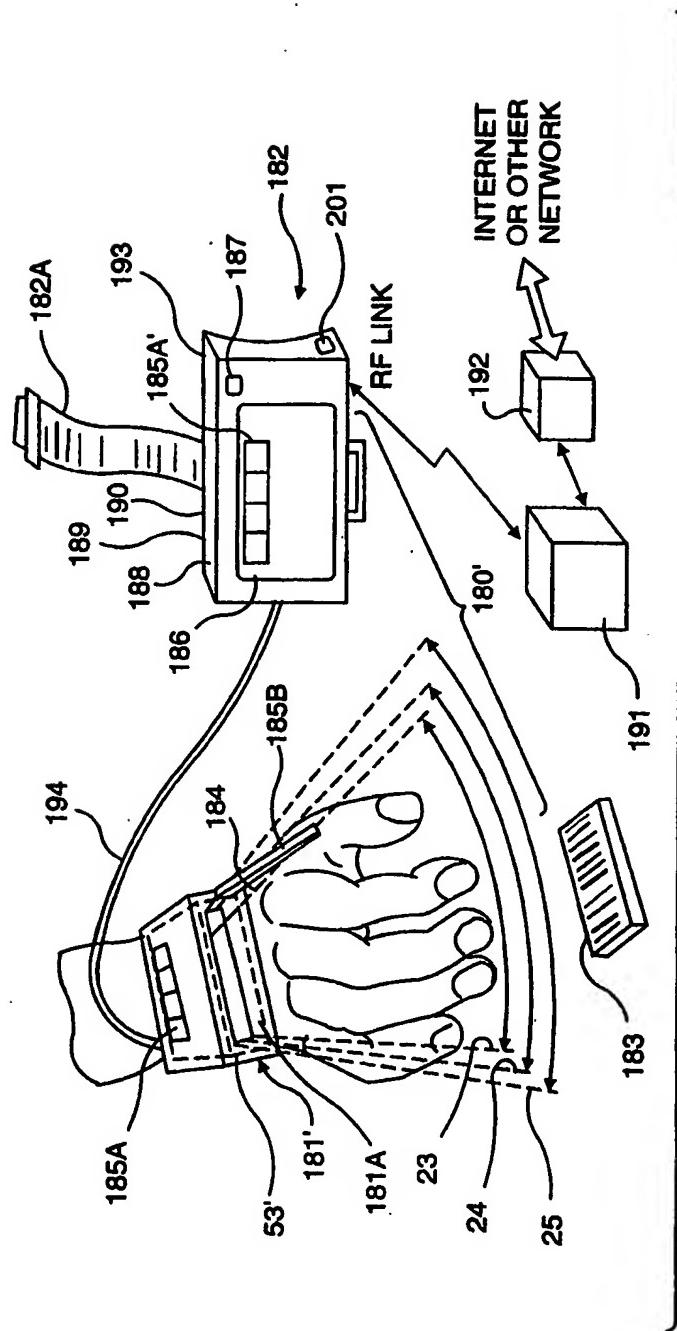


FIG. 8B

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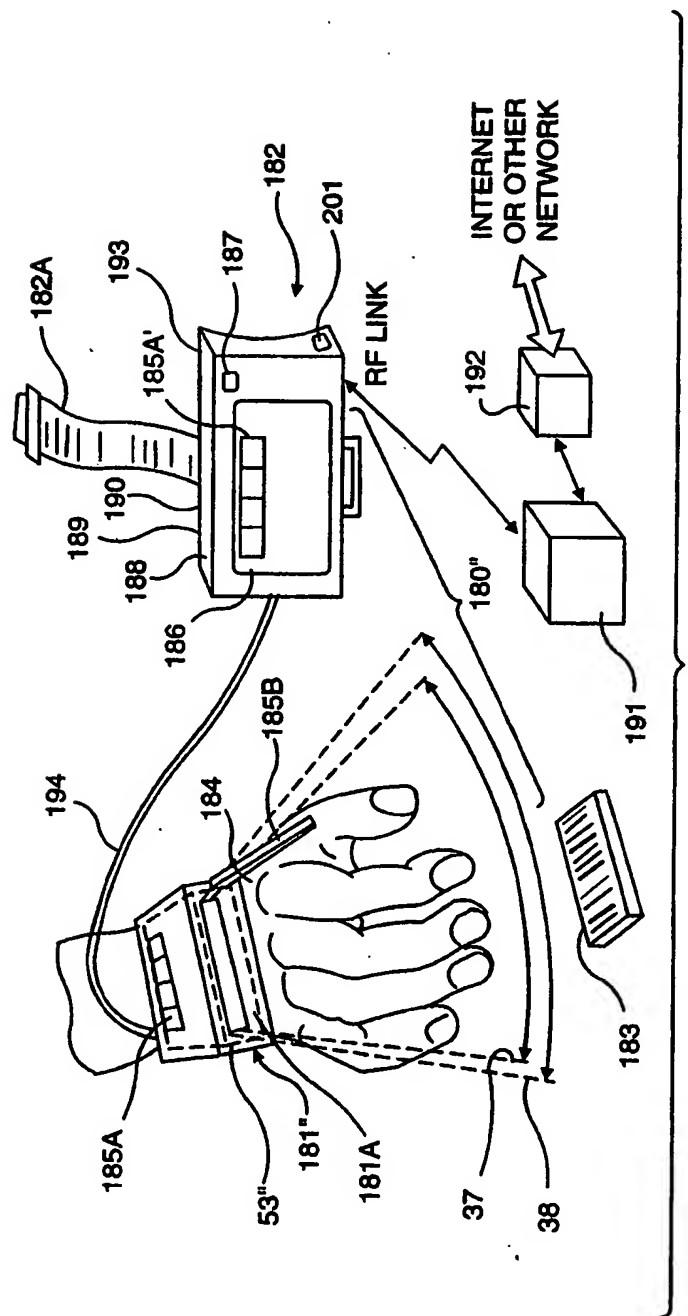


FIG. 8C

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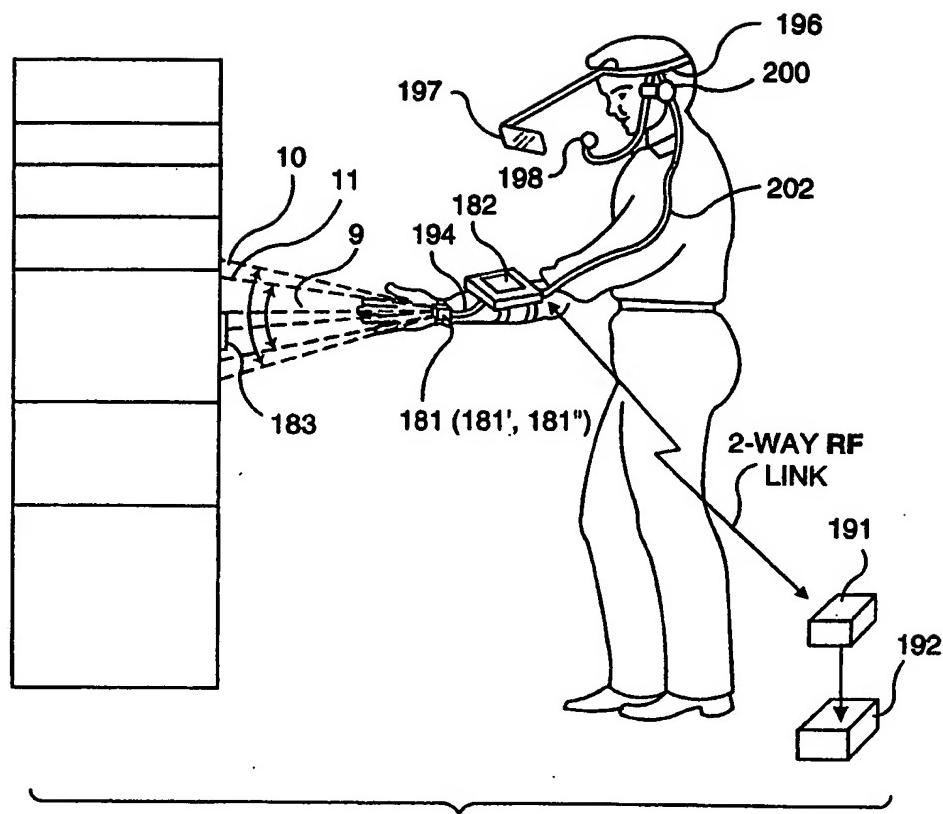
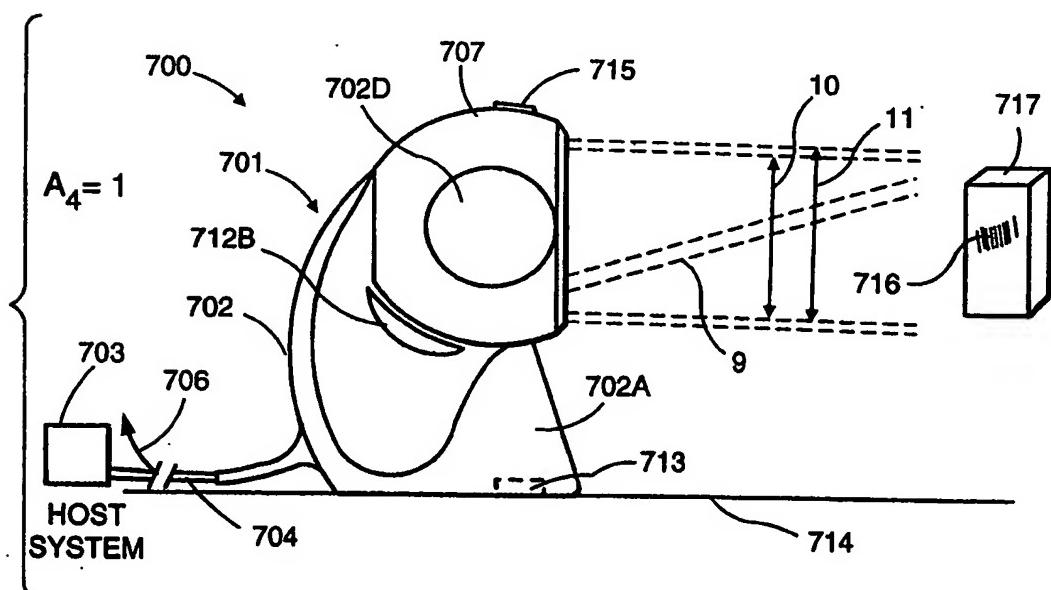
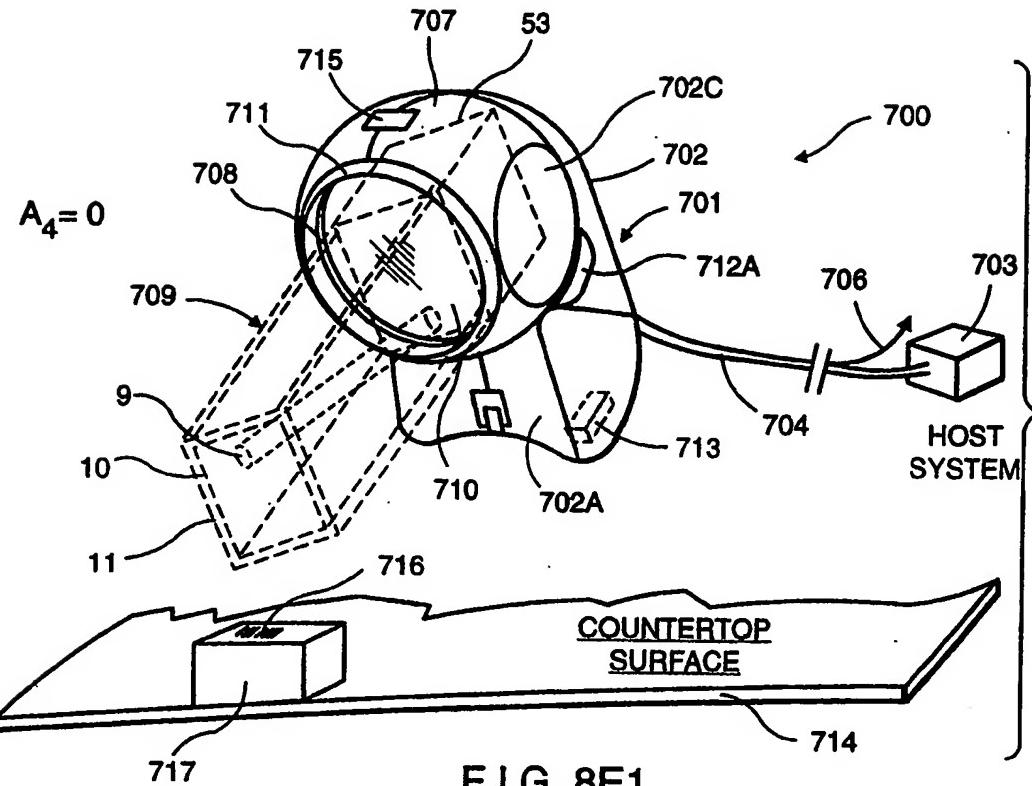


FIG. 8D

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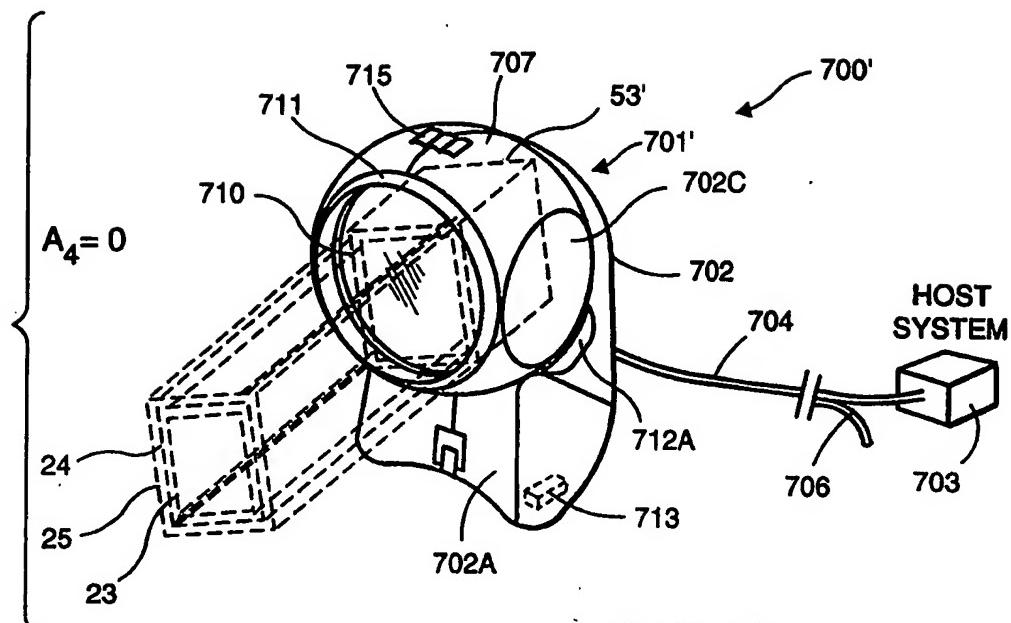


FIG. 8F

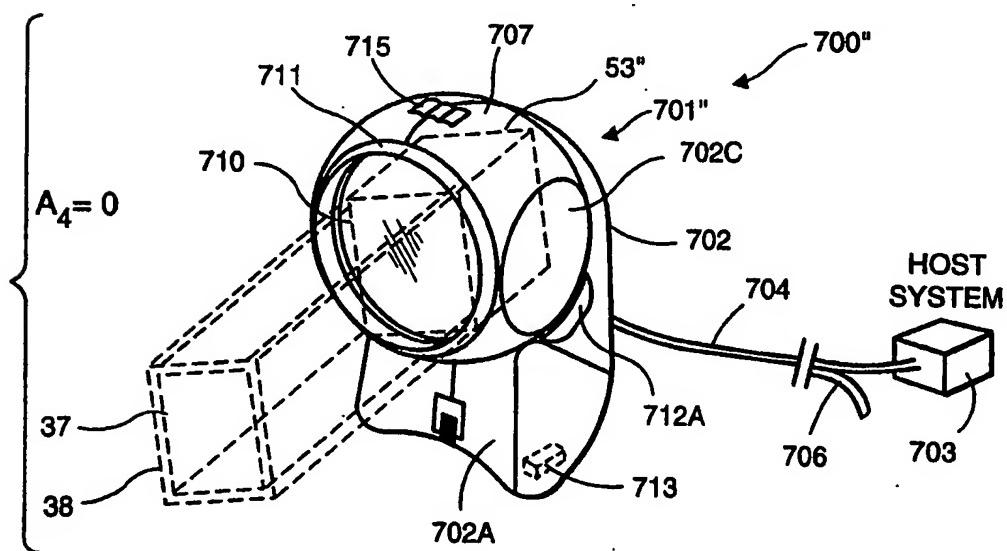


FIG. 8G

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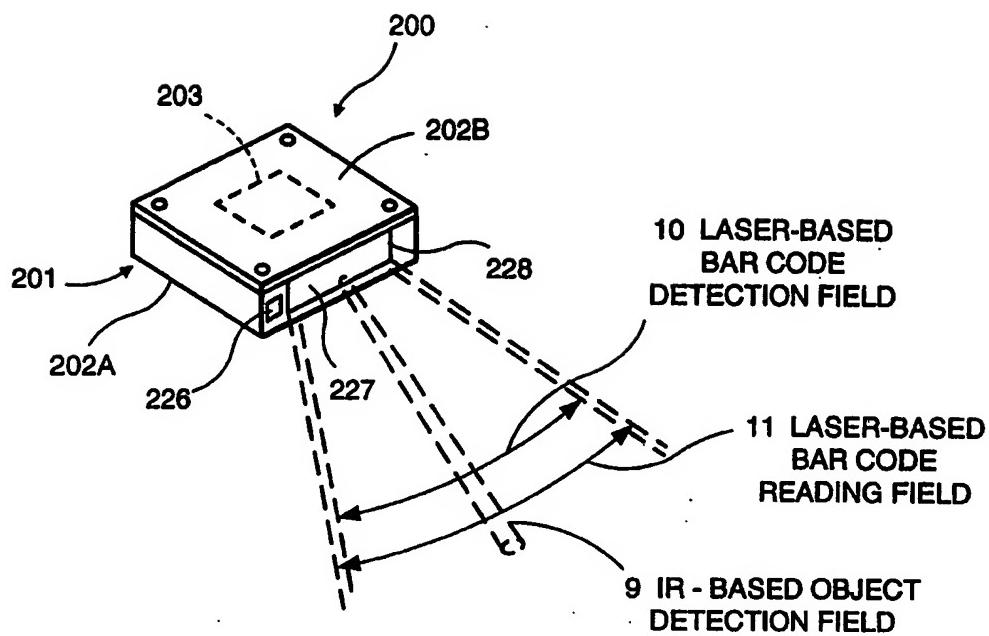


FIG. 9A

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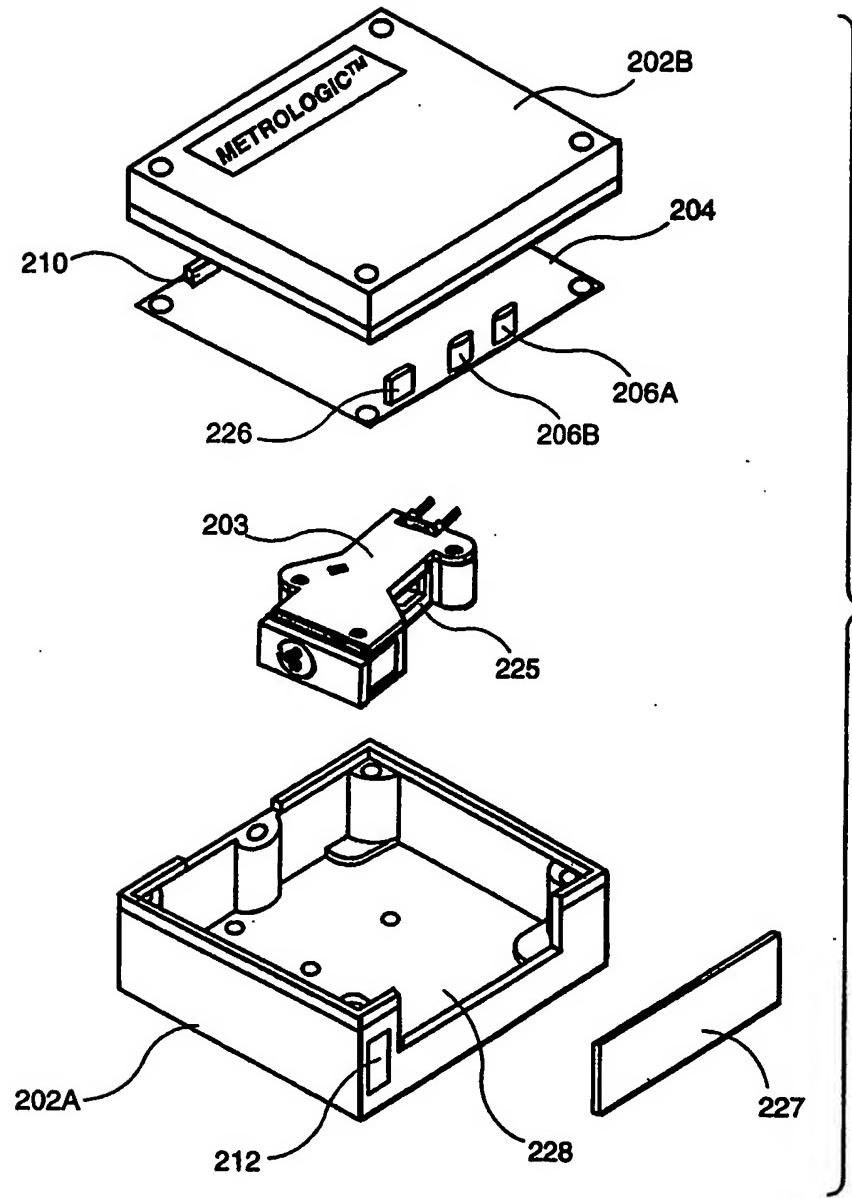


FIG. 9B

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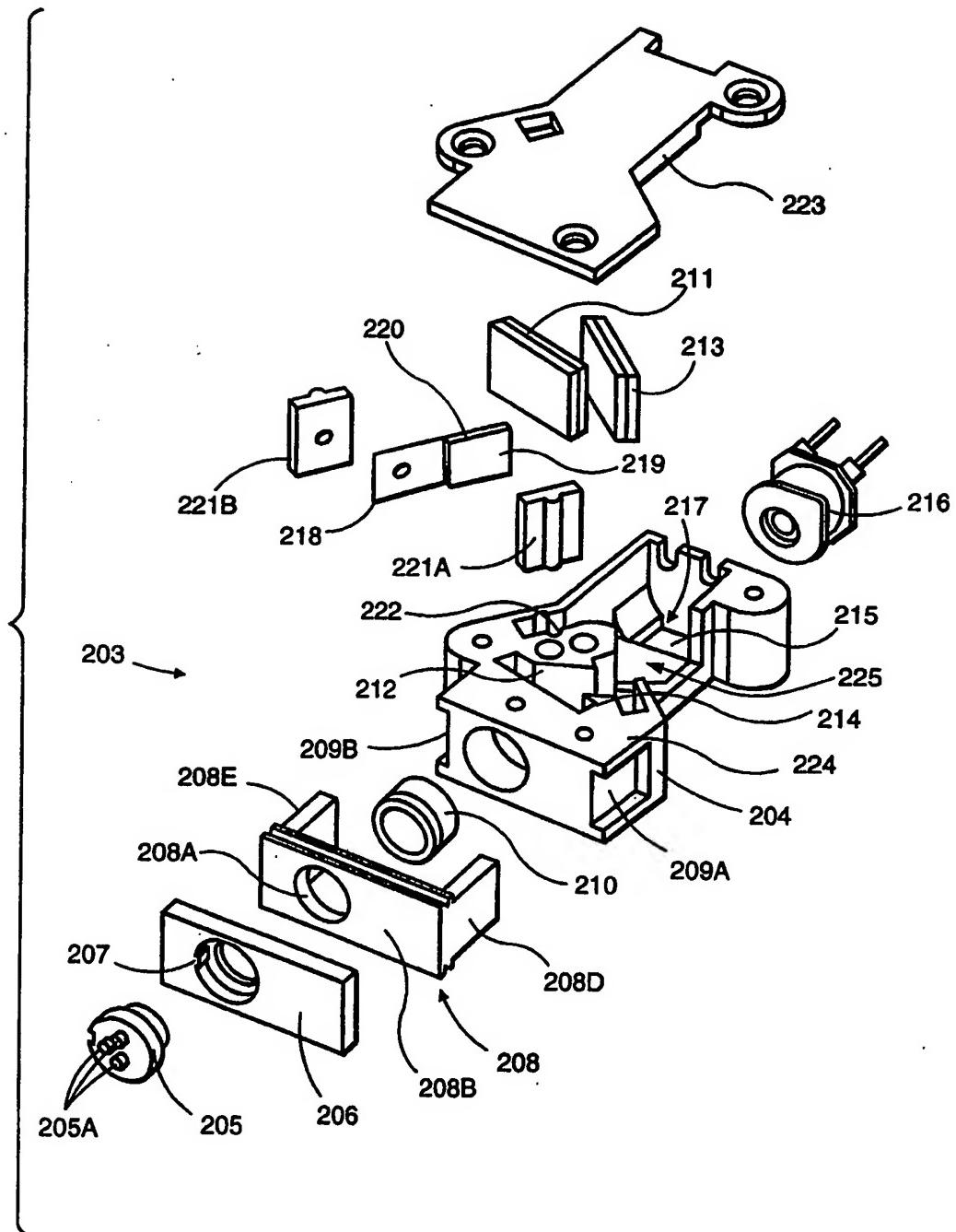


FIG. 9C

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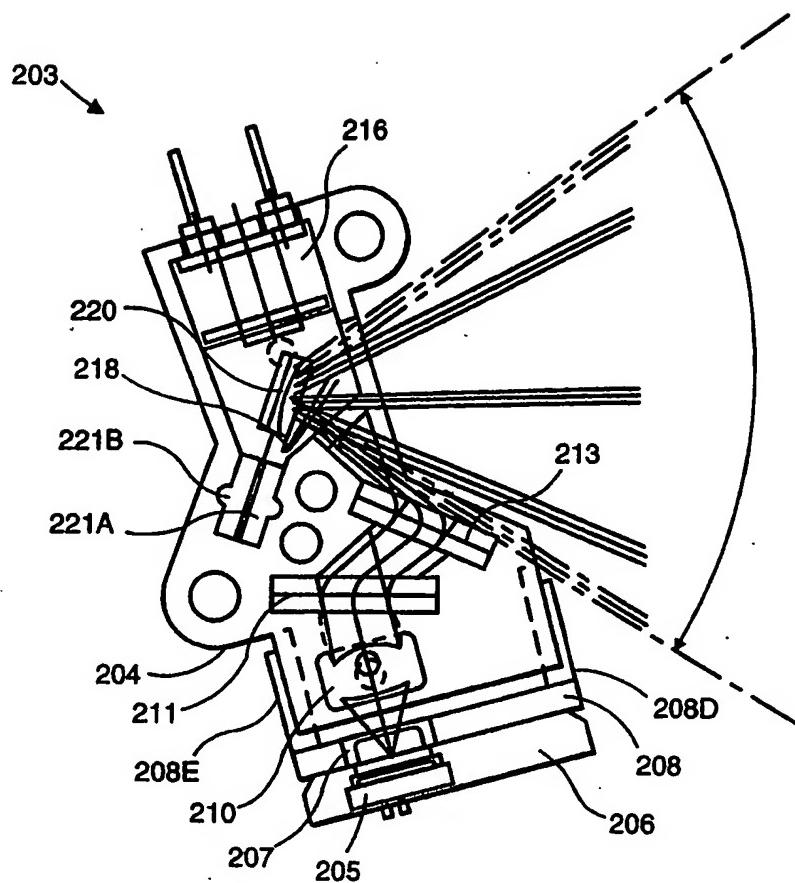


FIG. 9D

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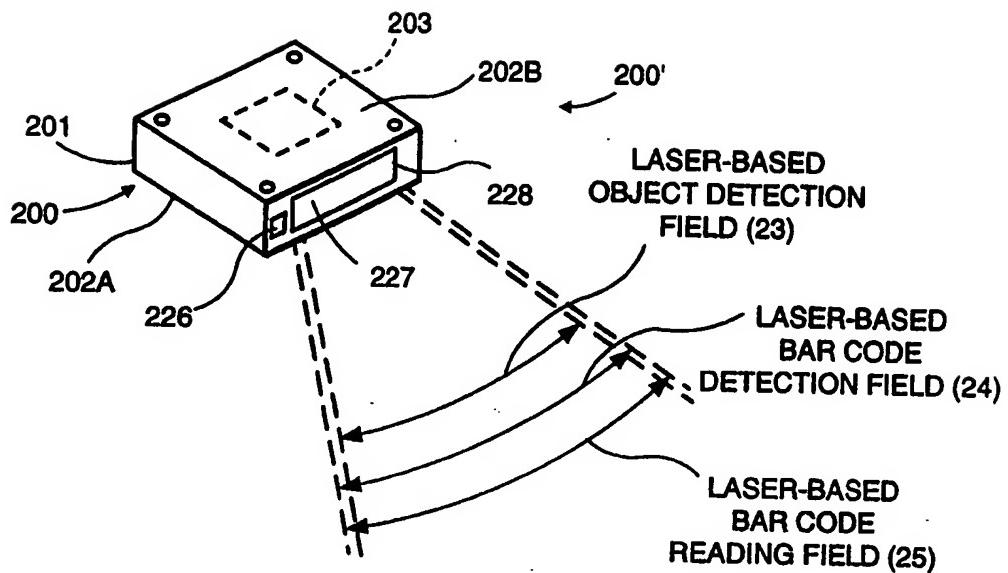


FIG. 9E

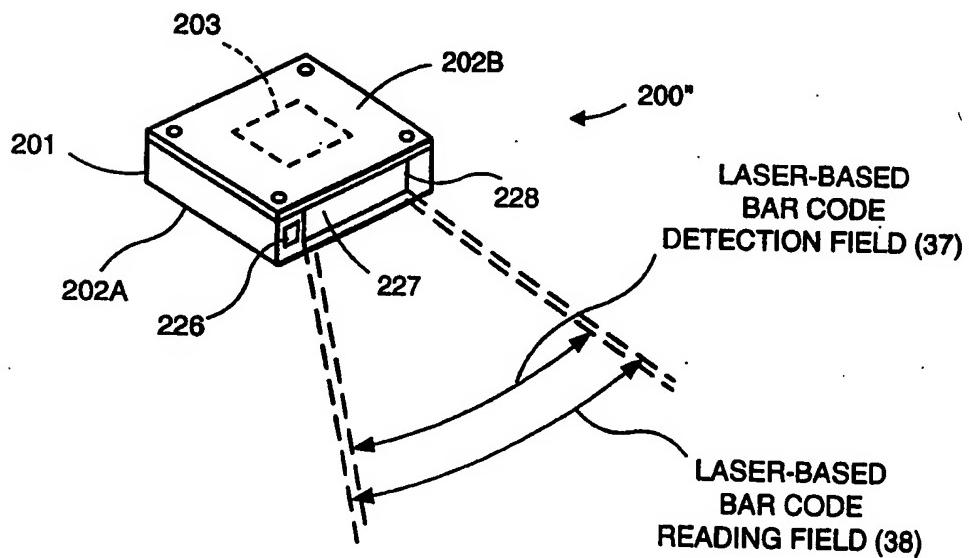


FIG. 9F

FIG. 10A

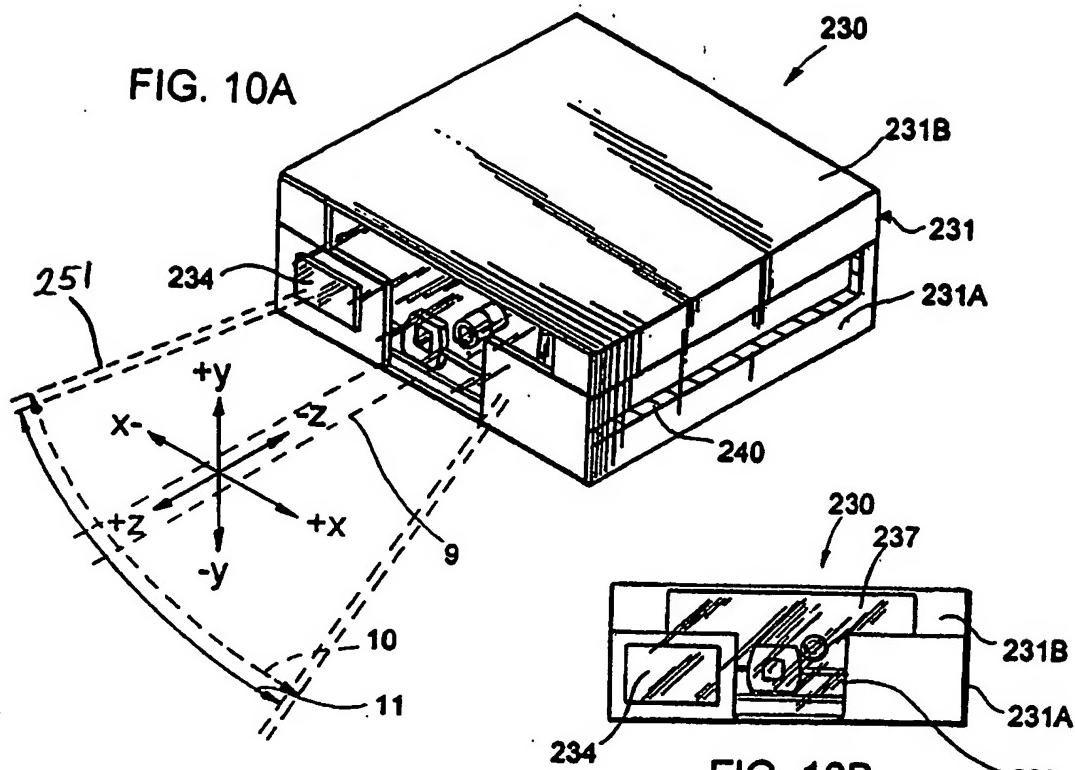


FIG. 10B

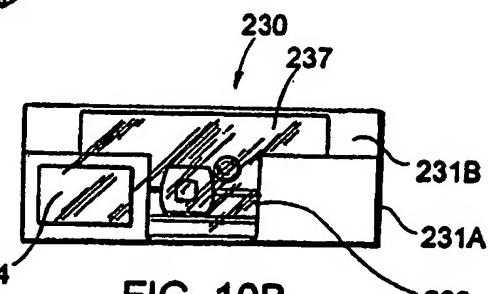


FIG. 10C

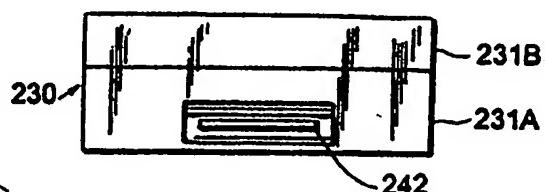
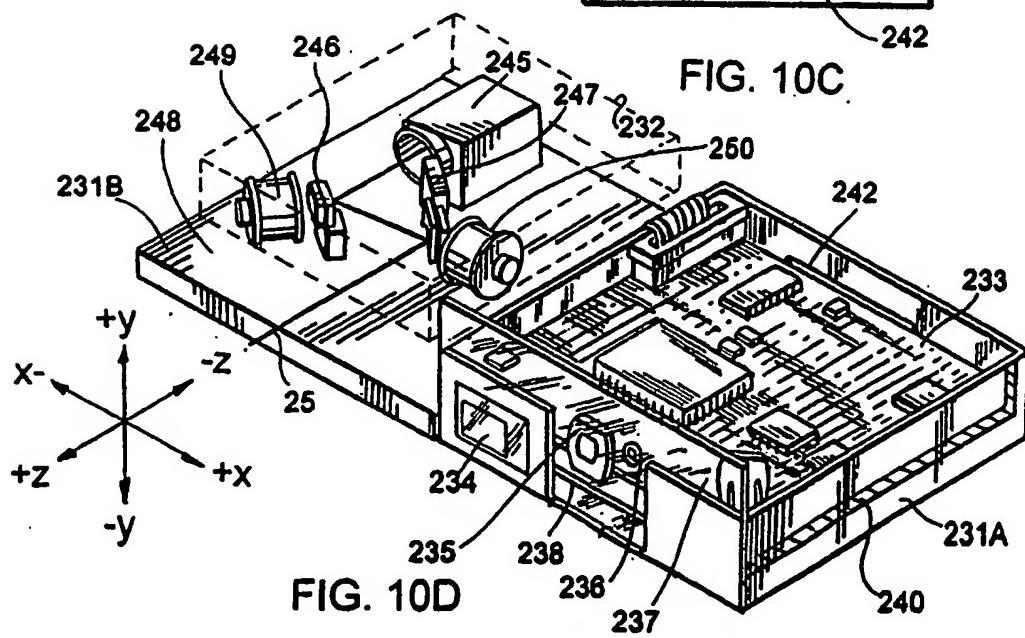


FIG. 10D



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FIG. 10E

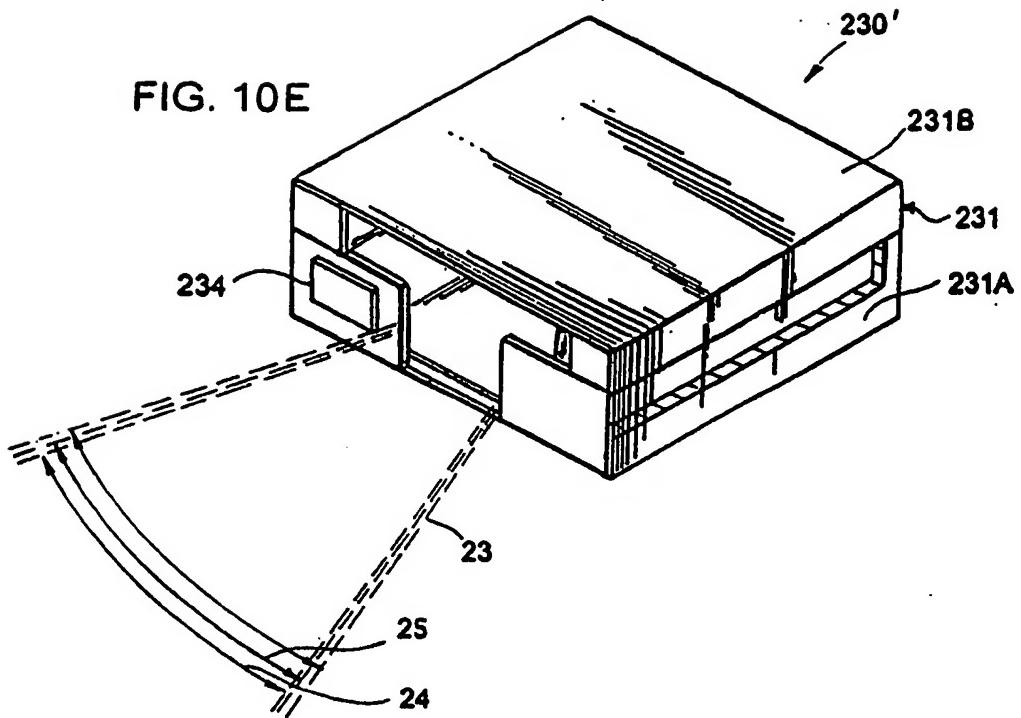
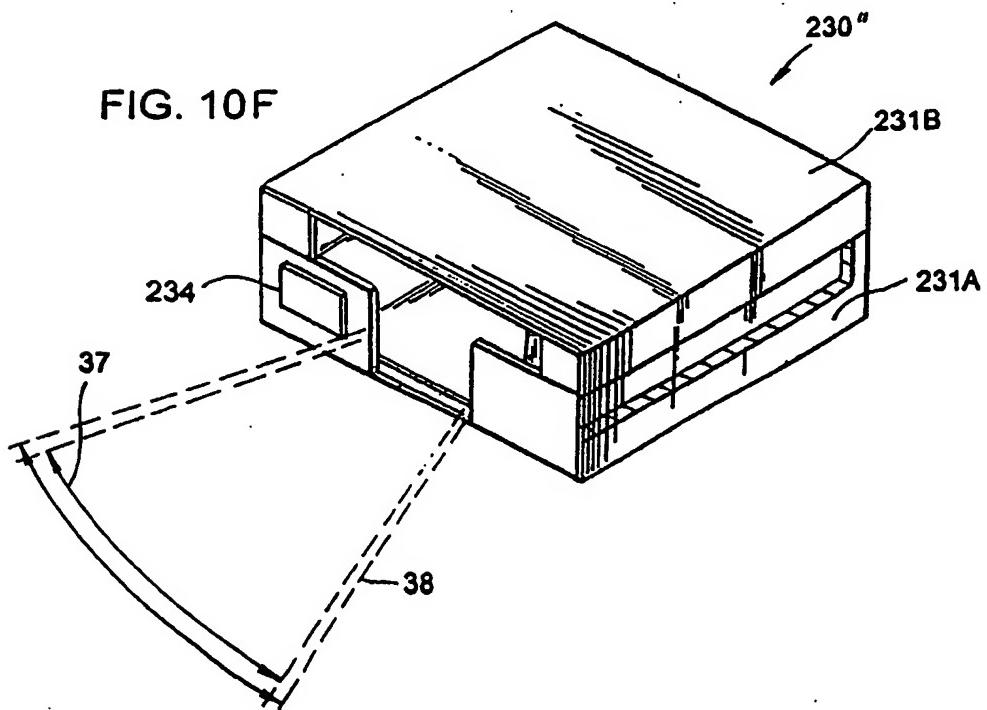


FIG. 10F



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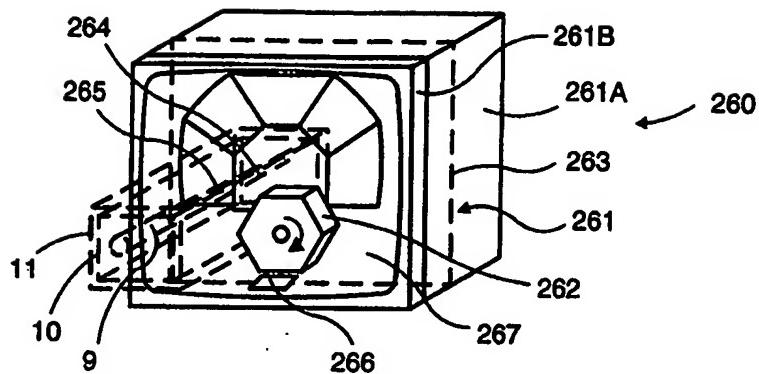


FIG. 11A

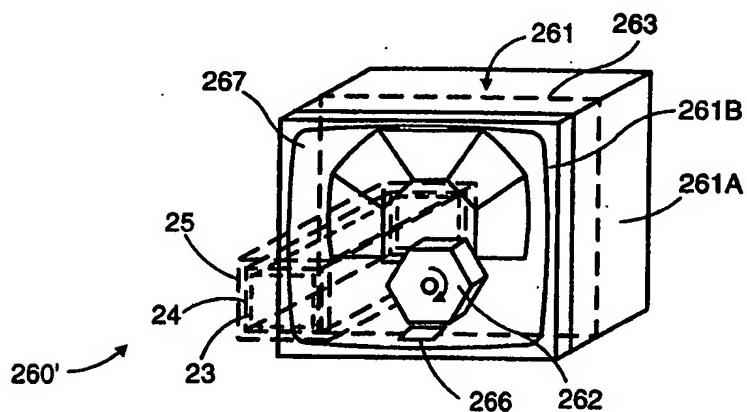


FIG. 11B

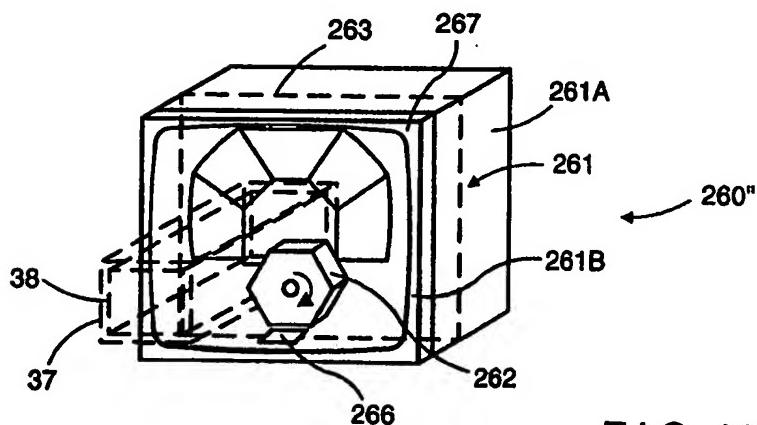


FIG. 11C

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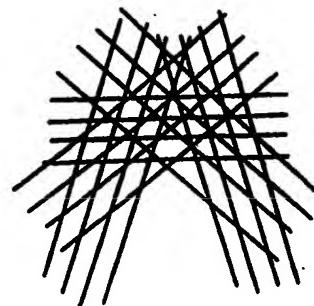


FIG. 12A

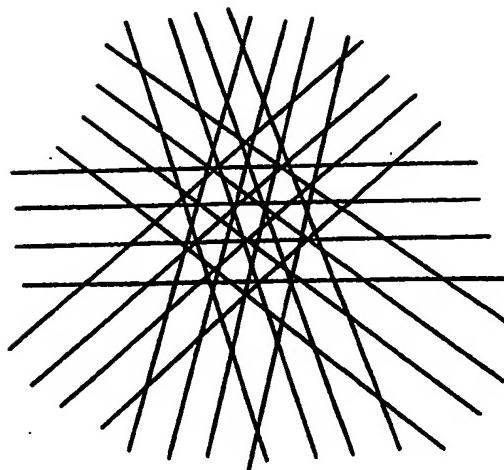


FIG. 12B

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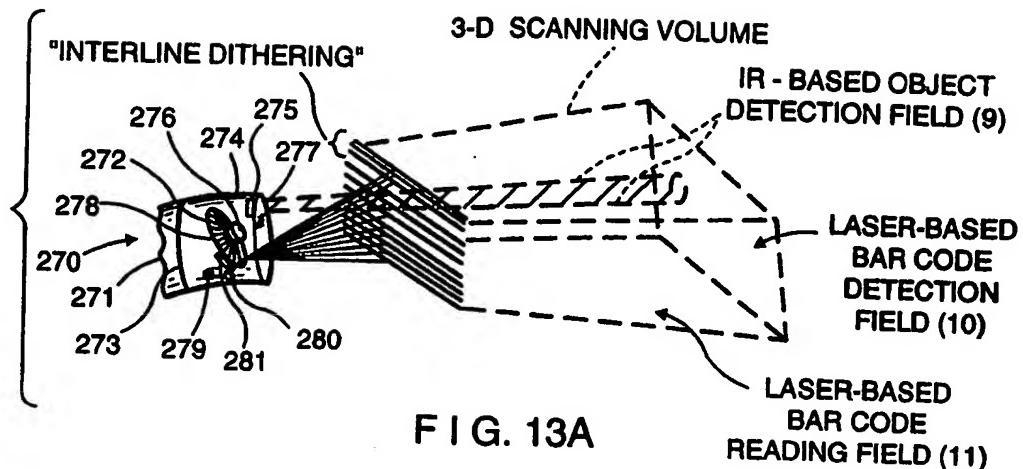


FIG. 13A

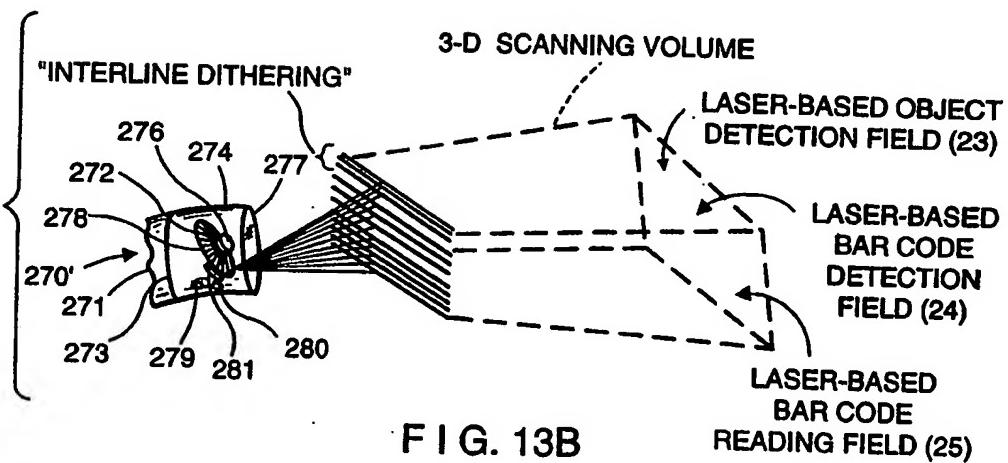


FIG. 13B

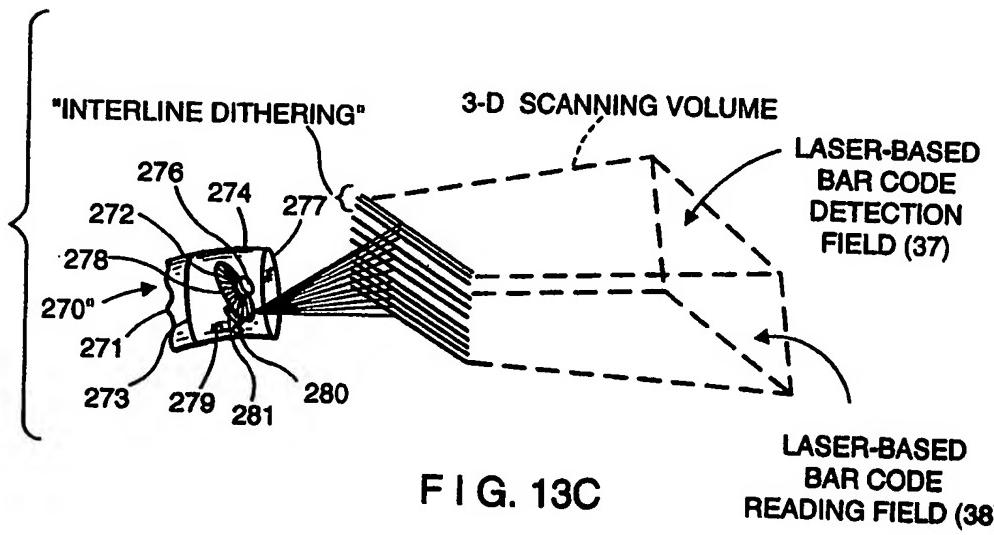
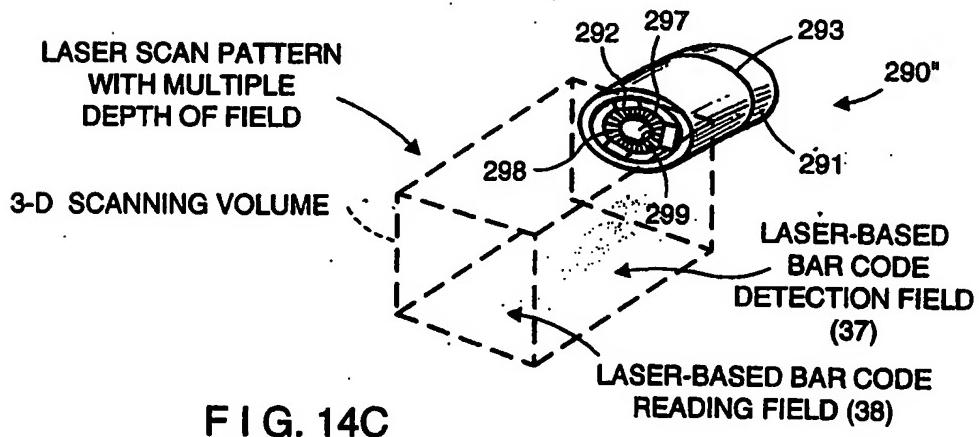
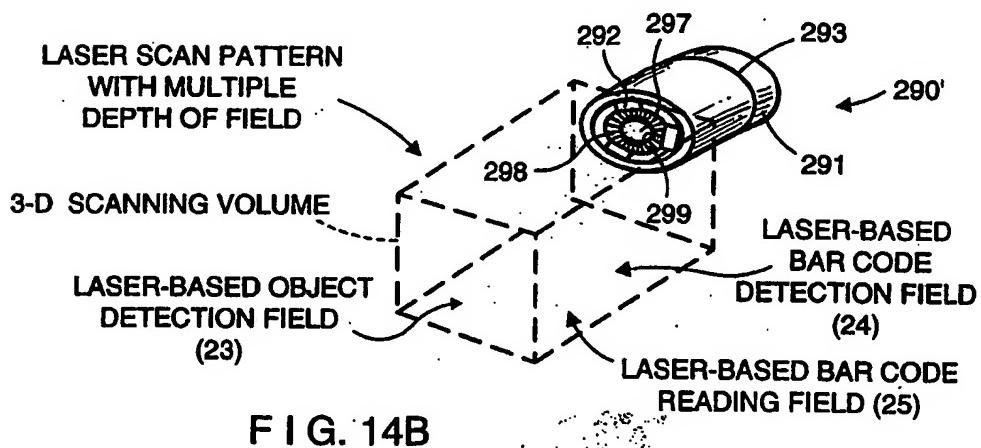
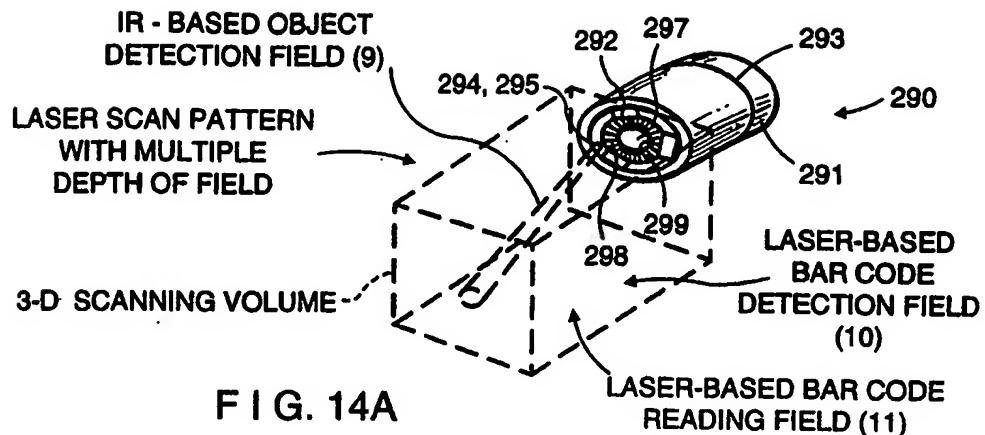


FIG. 13C

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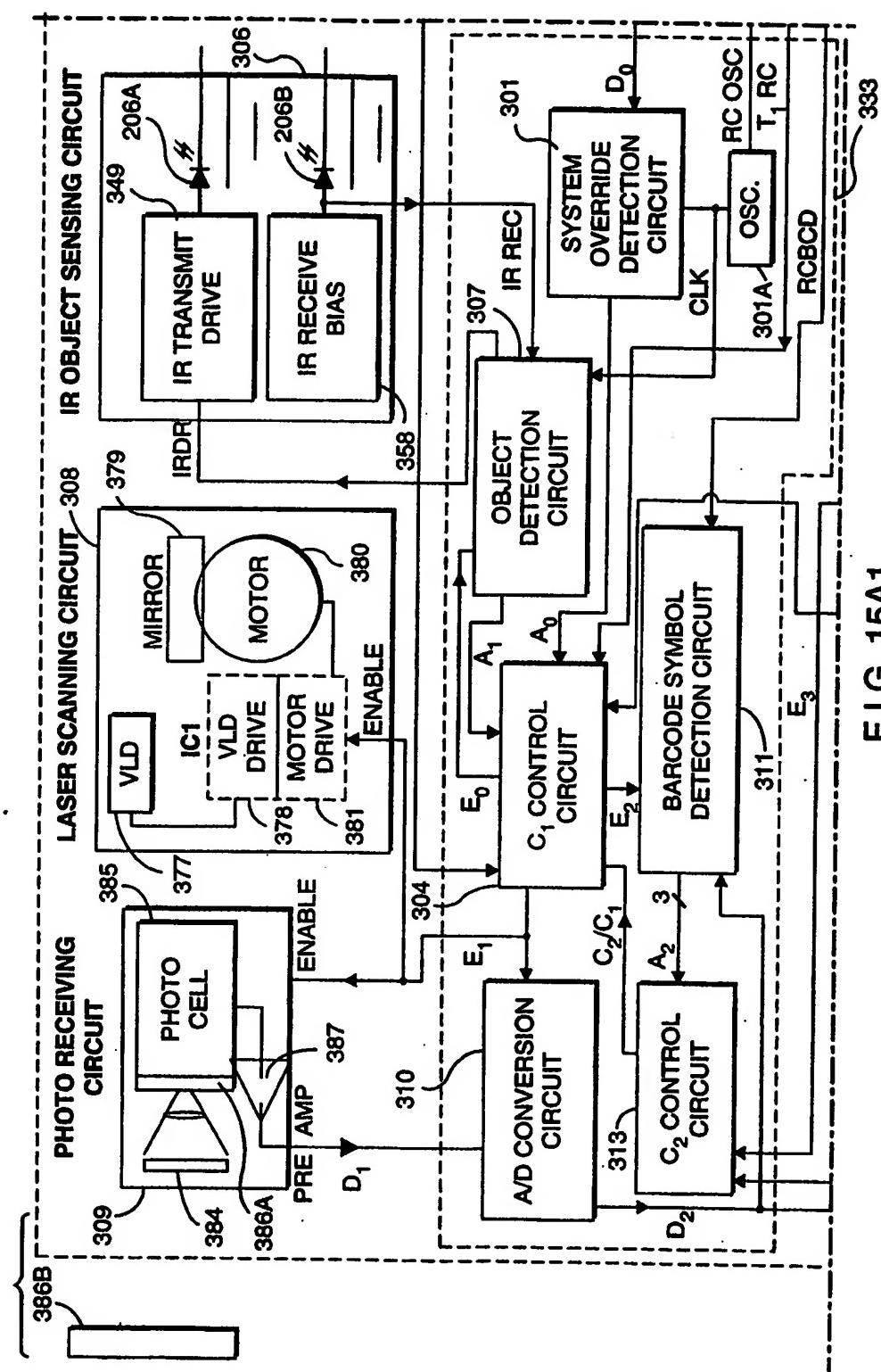


FIG. 15A1

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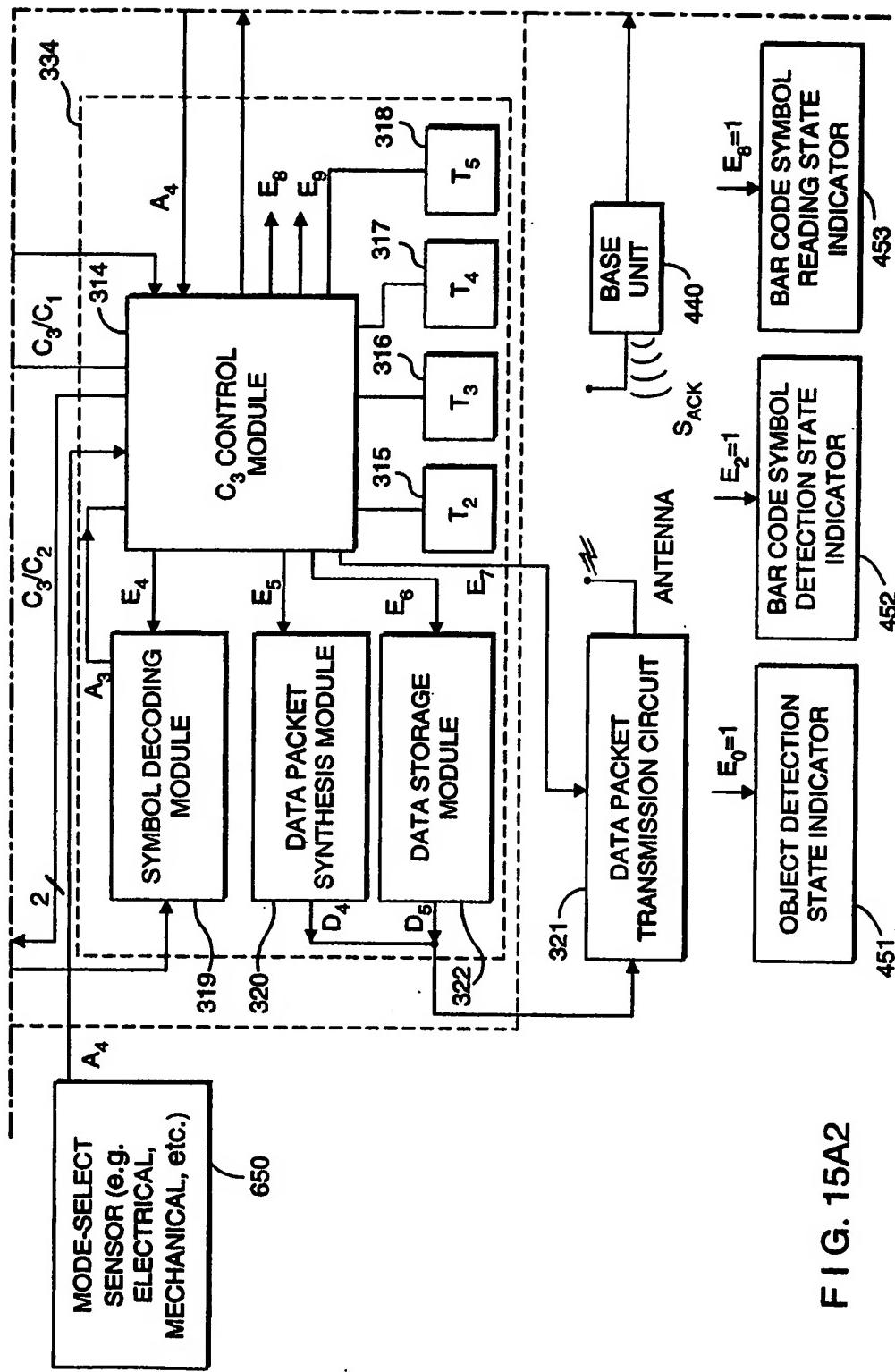
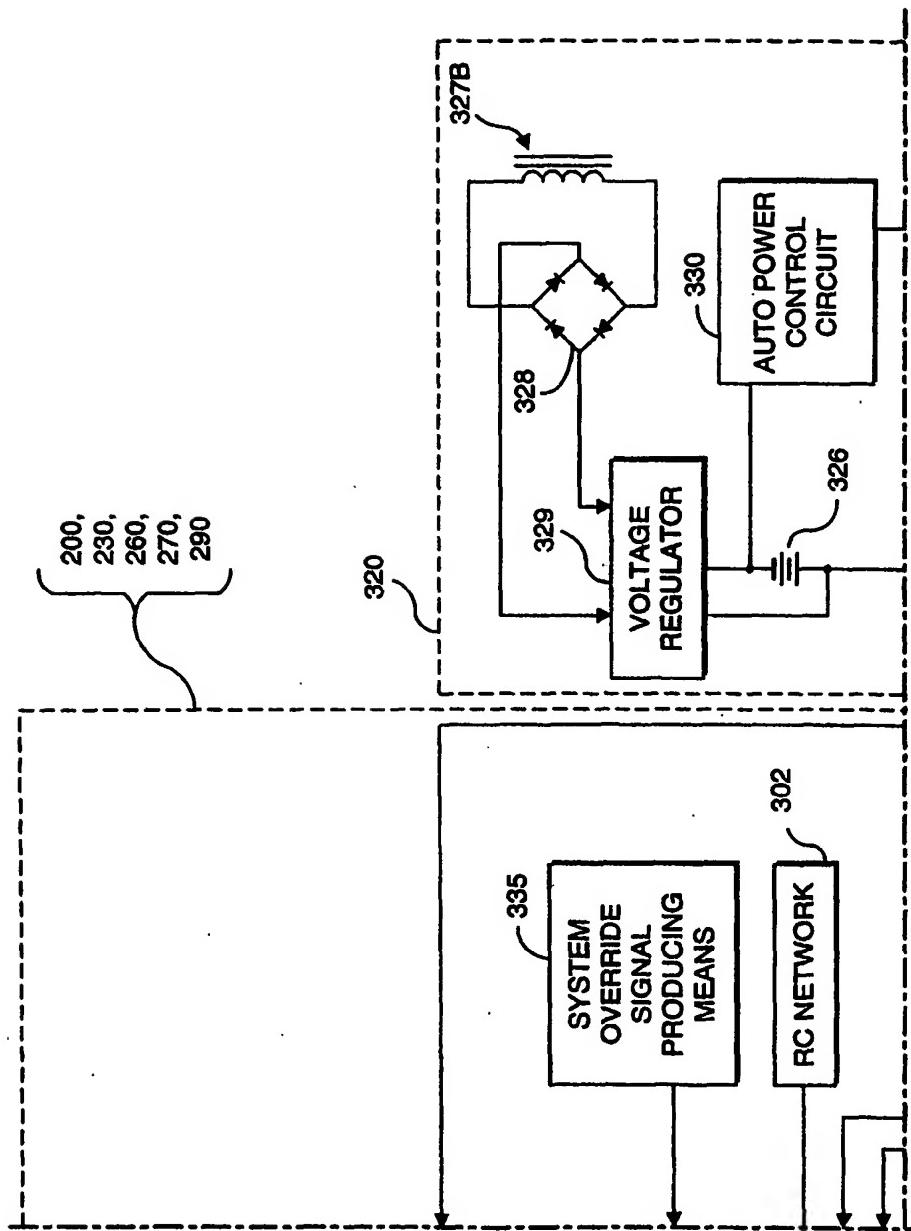


FIG. 15A2

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FIG. 15A3



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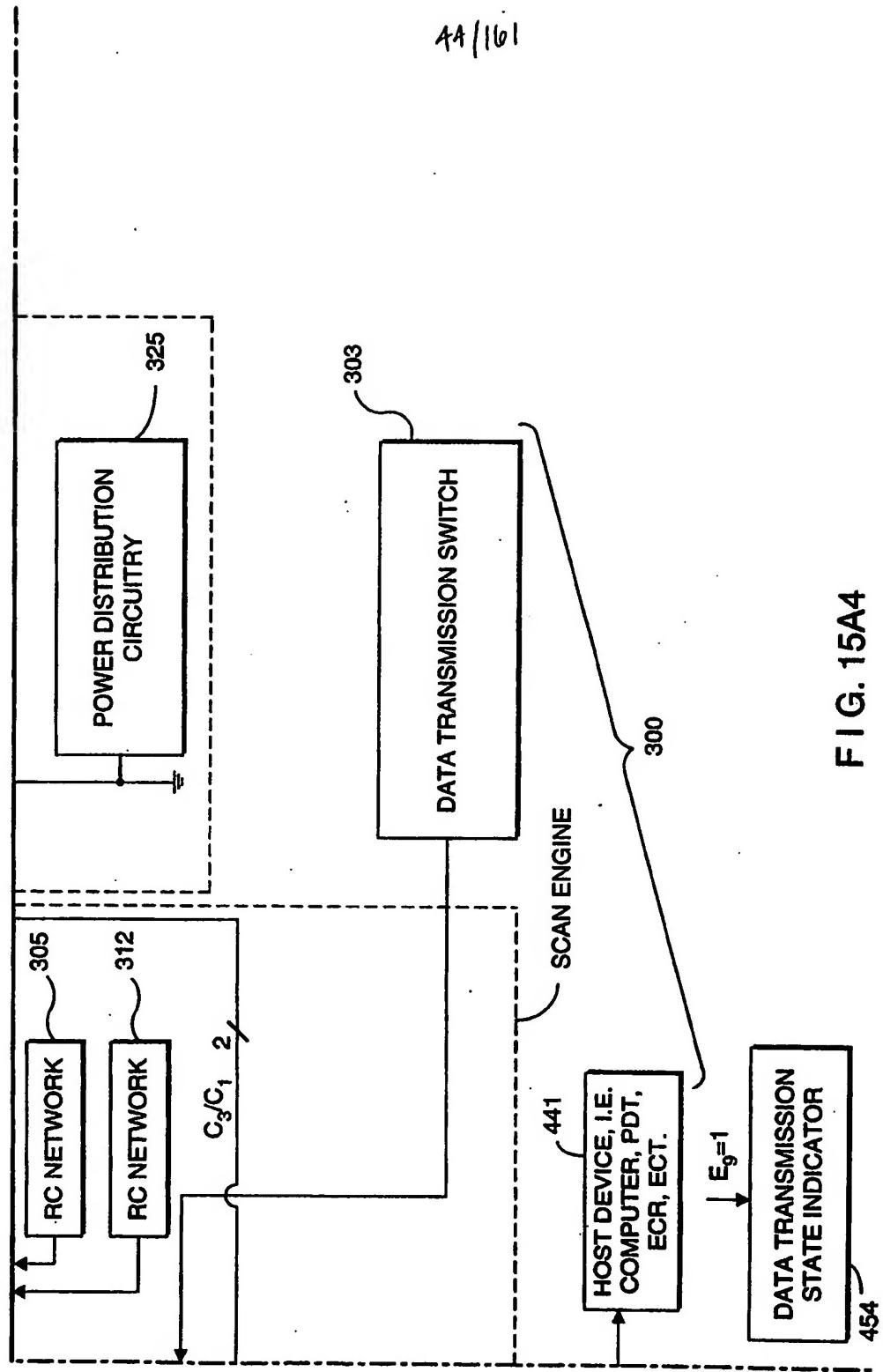


FIG. 15A4

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45 | 16 |

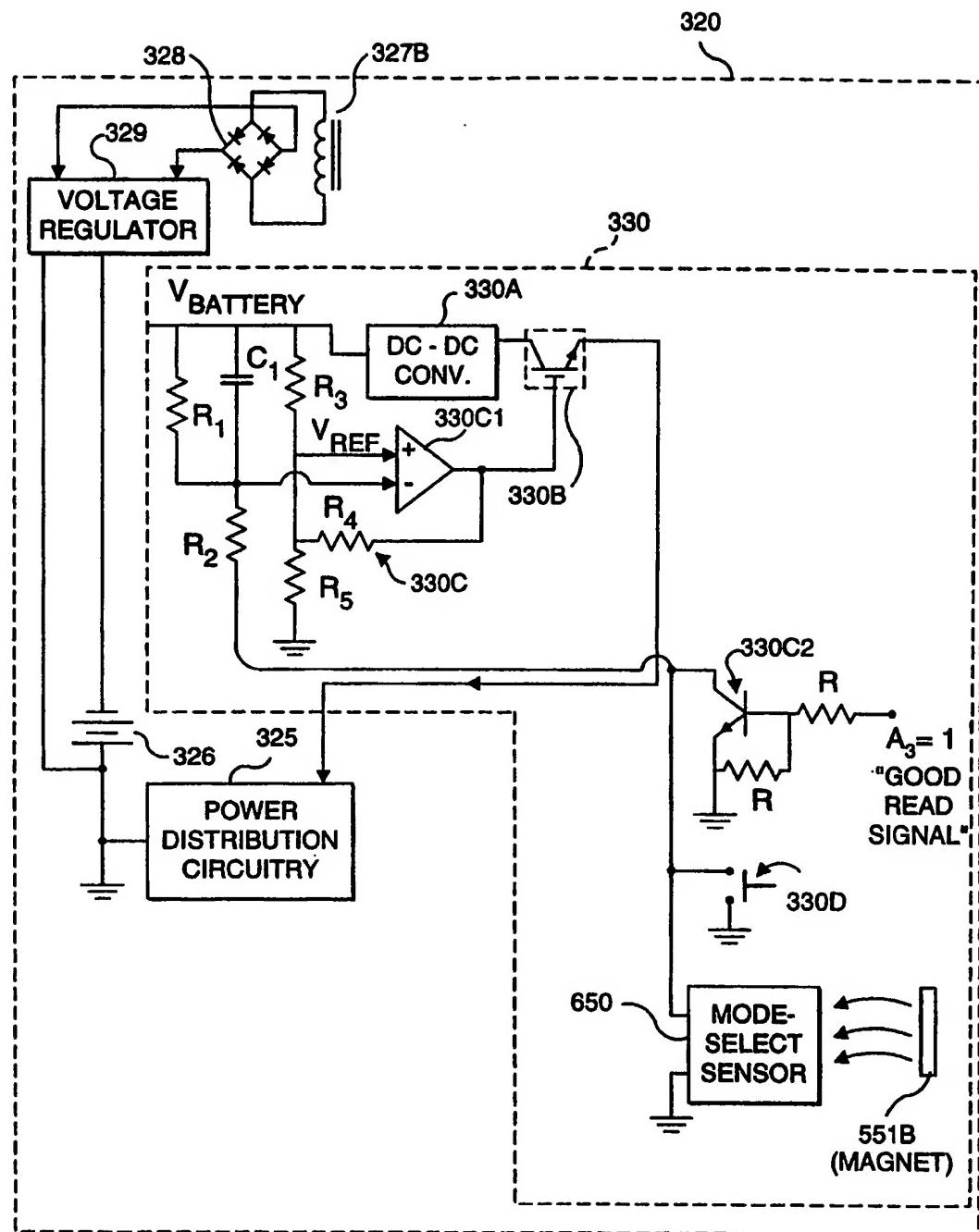


FIG. 15B1

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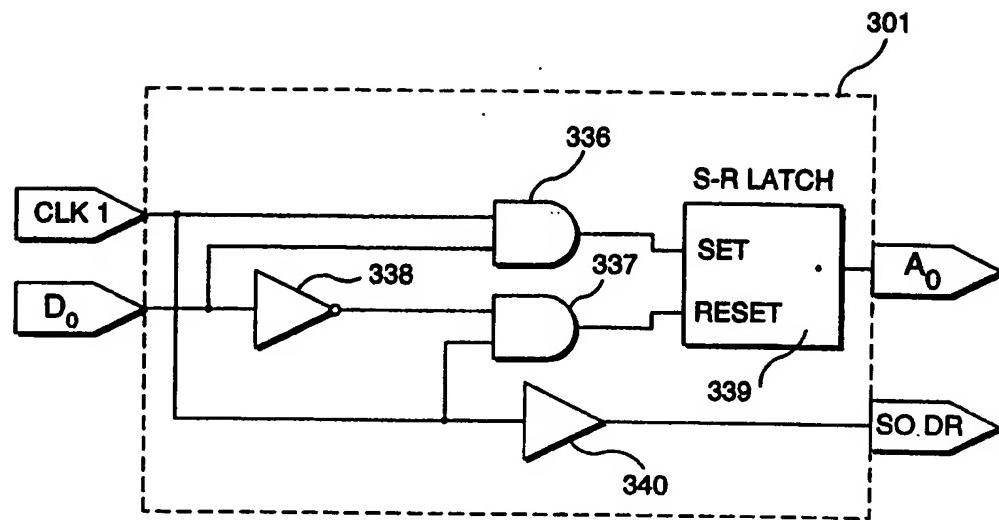


FIG. 15B2

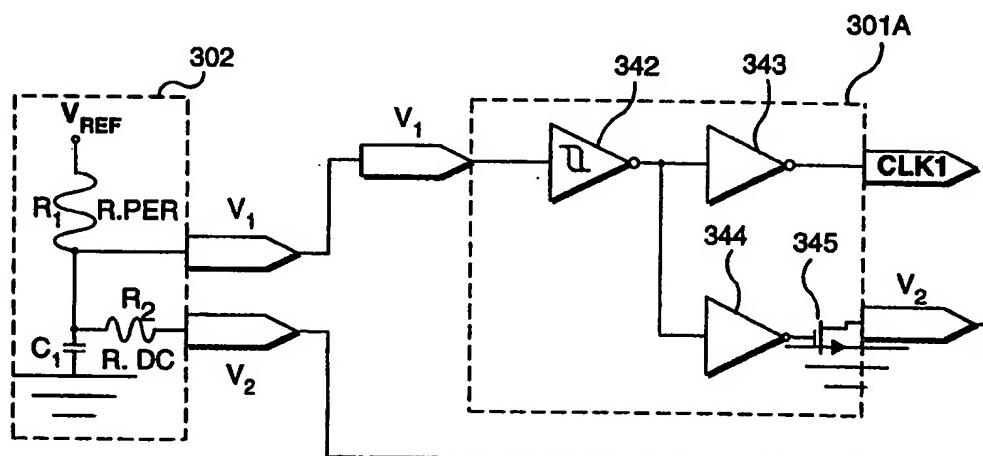


FIG. 15C

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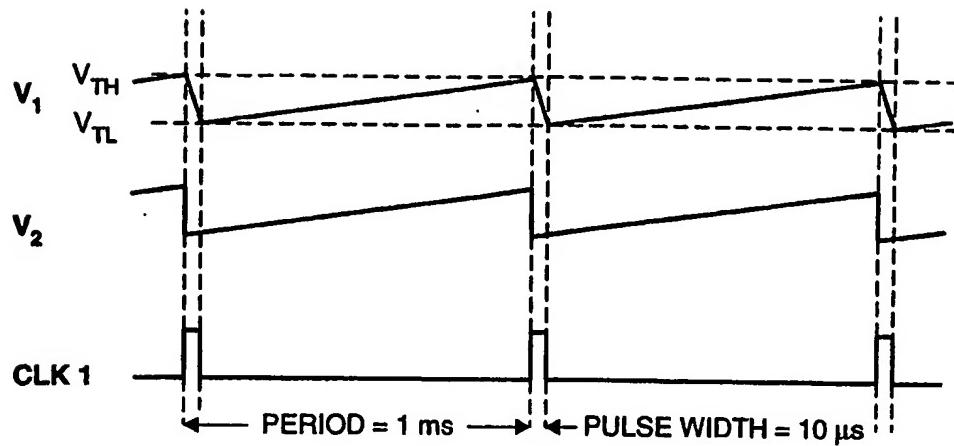


FIG. 15D

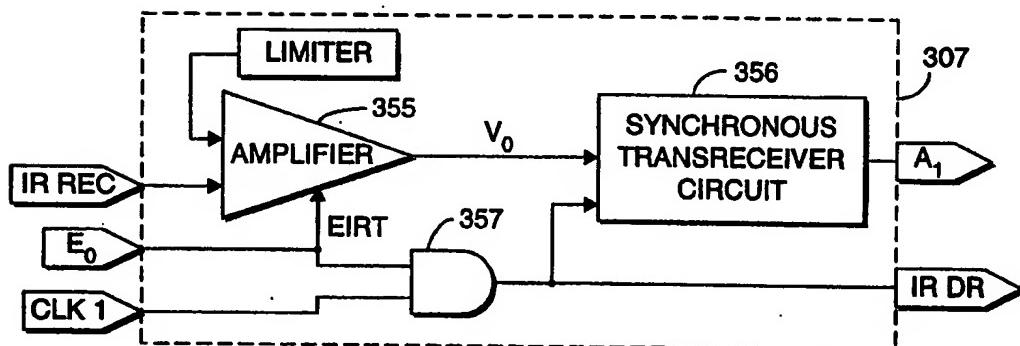


FIG. 15E

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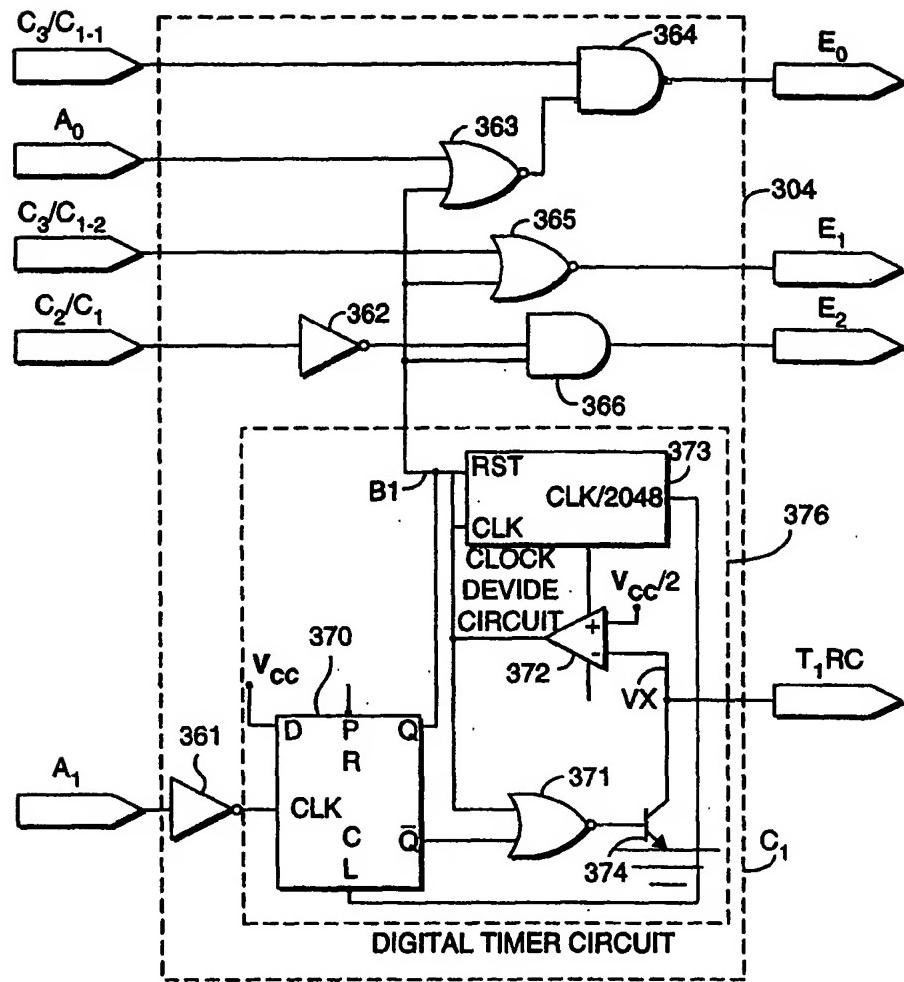


FIG. 15F

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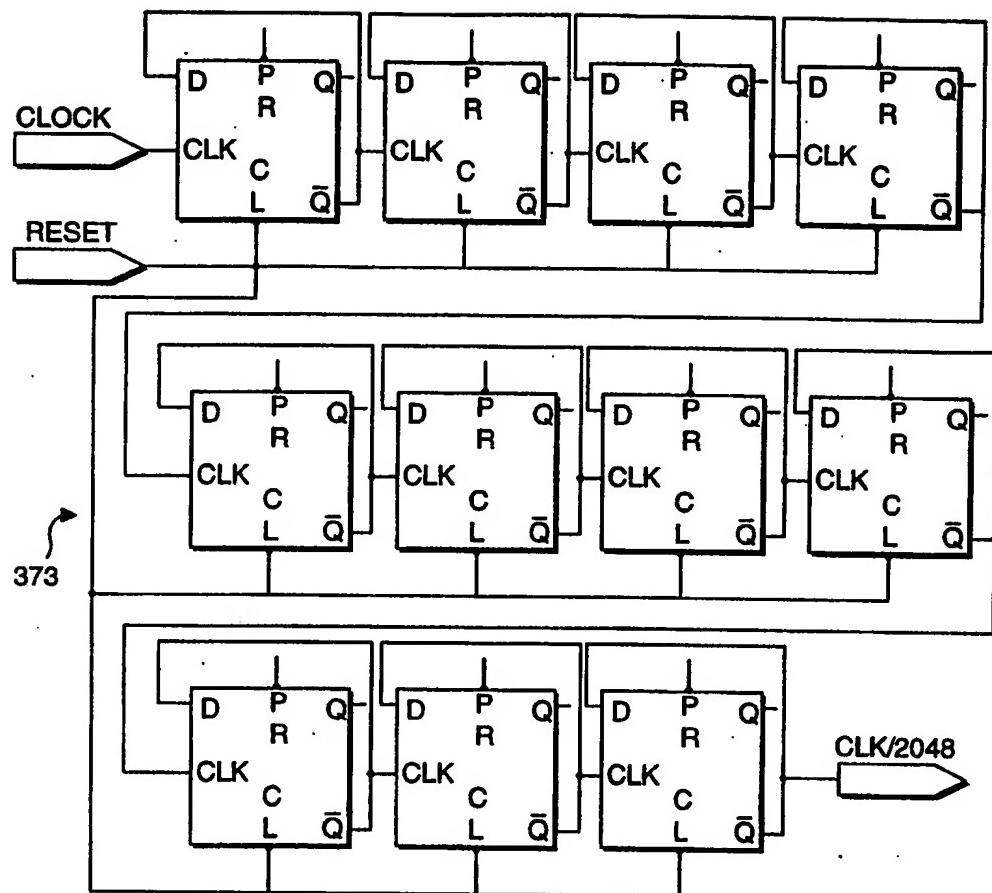


FIG. 15G

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$$\left. \begin{array}{l} E_0 = \overline{(B_1 + A_0)(C_3/C_{1.1})} \\ E_1 = (C_3/C_{1.2}) + B_1 \\ E_2 = (C_2/C_1)(T_1) \end{array} \right\}$$

FIG. 15H

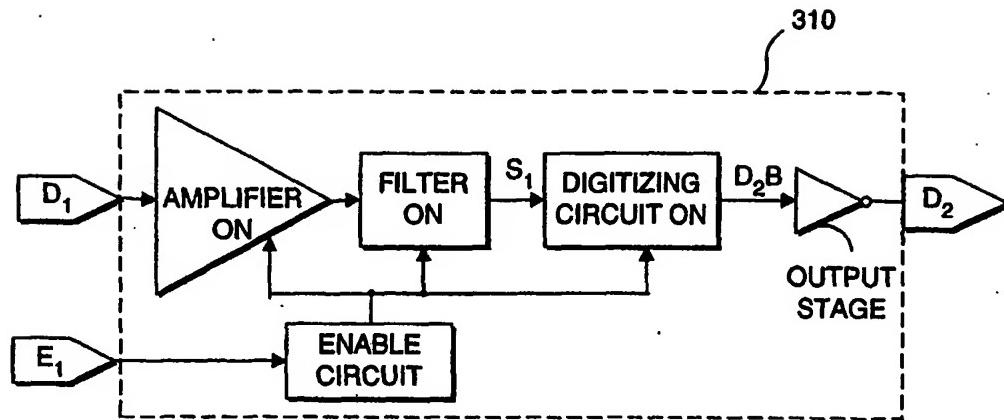


FIG. 15I

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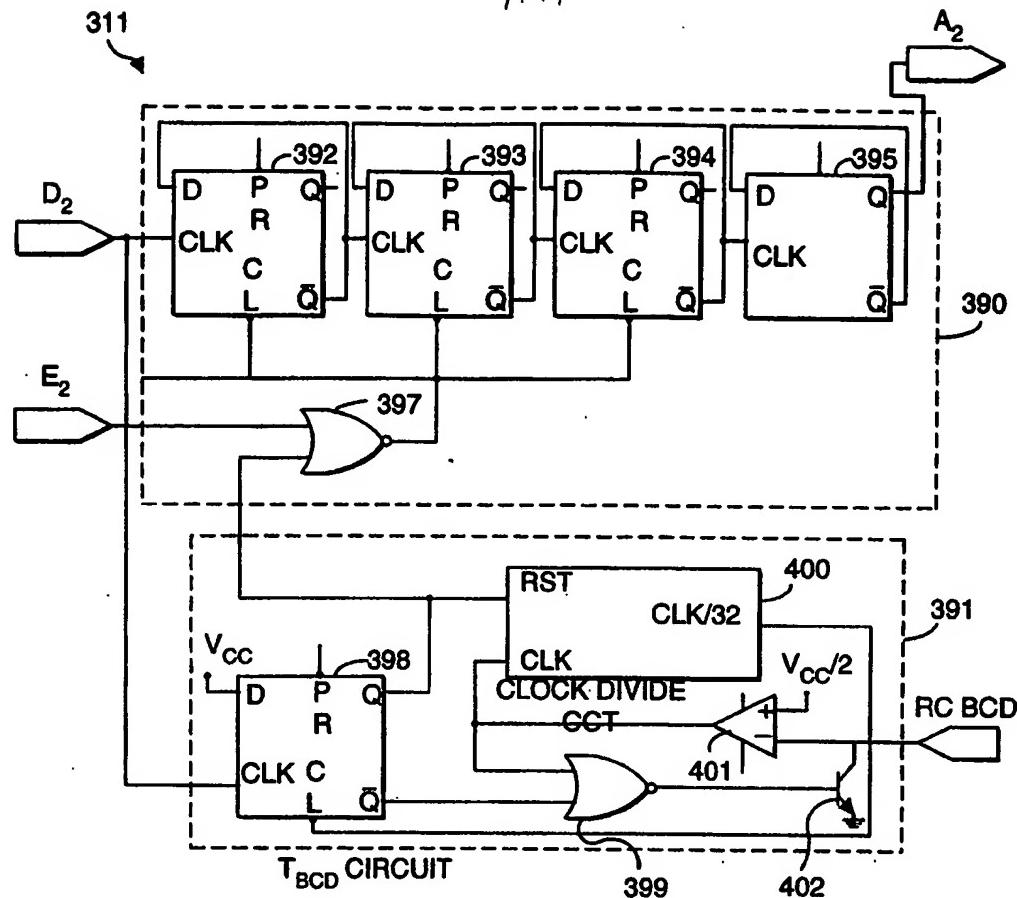


FIG. 15J

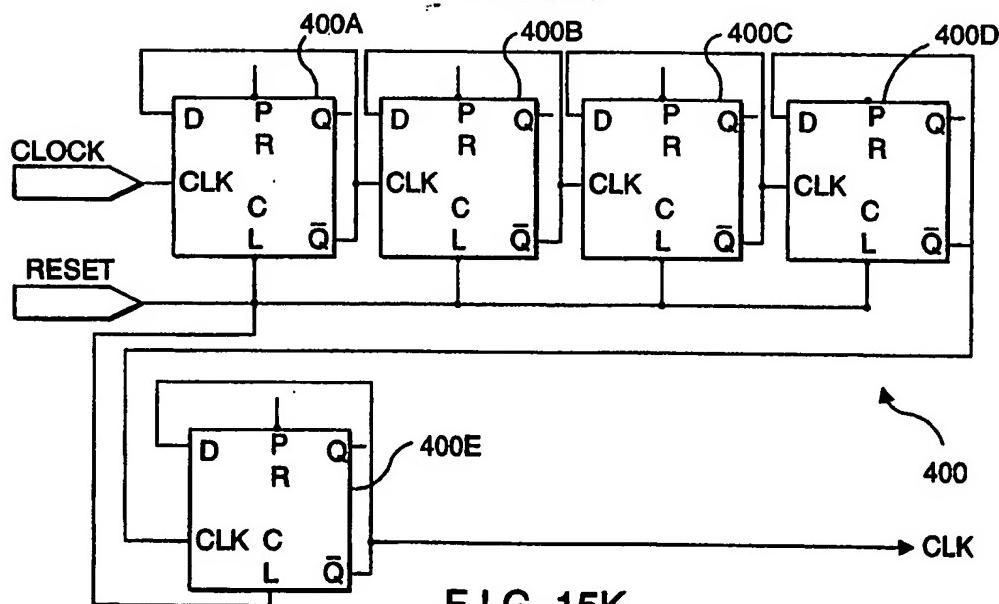


FIG. 15K

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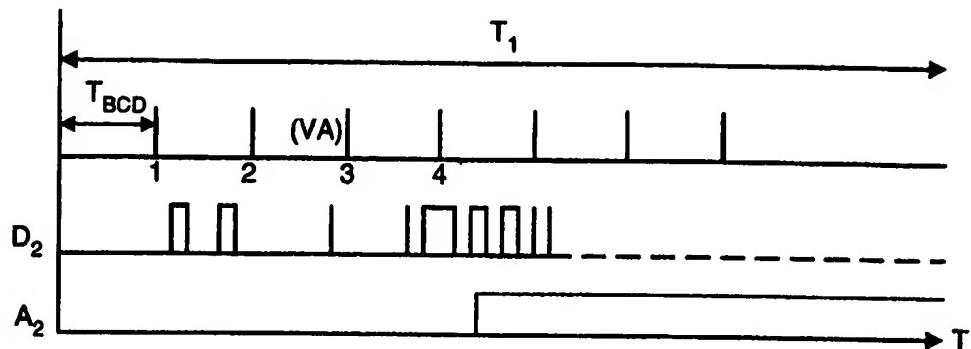


FIG. 15L

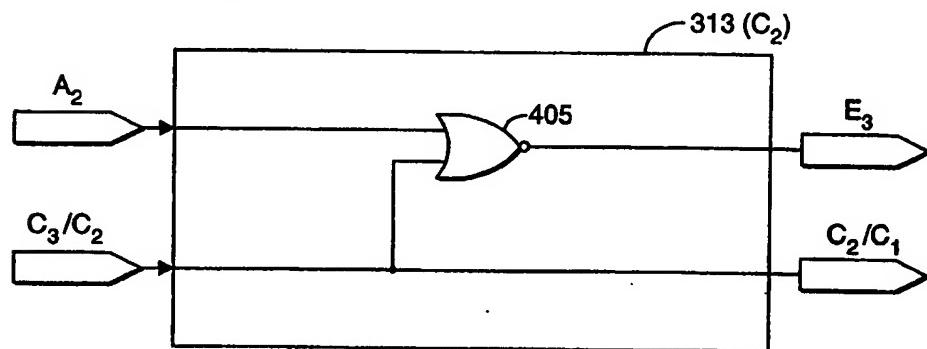


FIG. 15M

$C_3 / C_2$	$A_2$	$E_3$	$C_2 / C_1$
0	0	0	0
0	1	1	0
1	X	1	1

X: DON'T CARE (I.E.  $C_3 / C_2$  OVERRIDES  $A_2$ )

FIG. 15N

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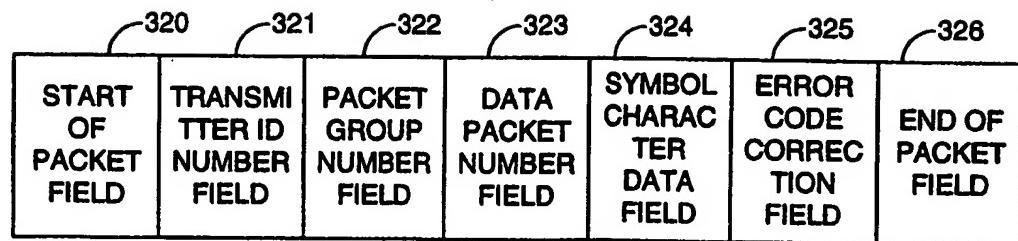


FIG. 15O

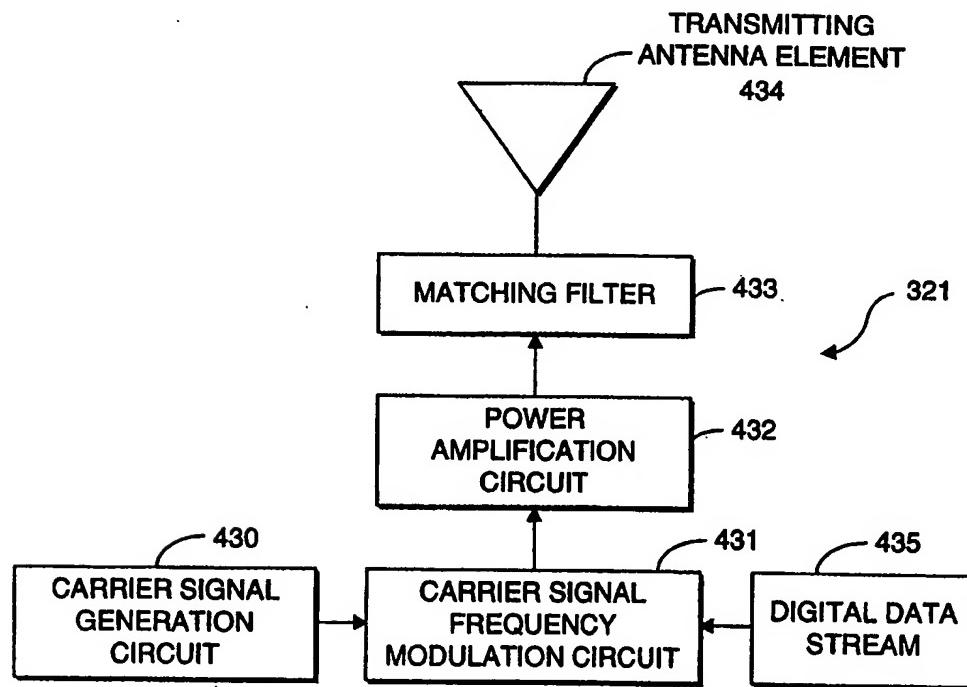


FIG. 16

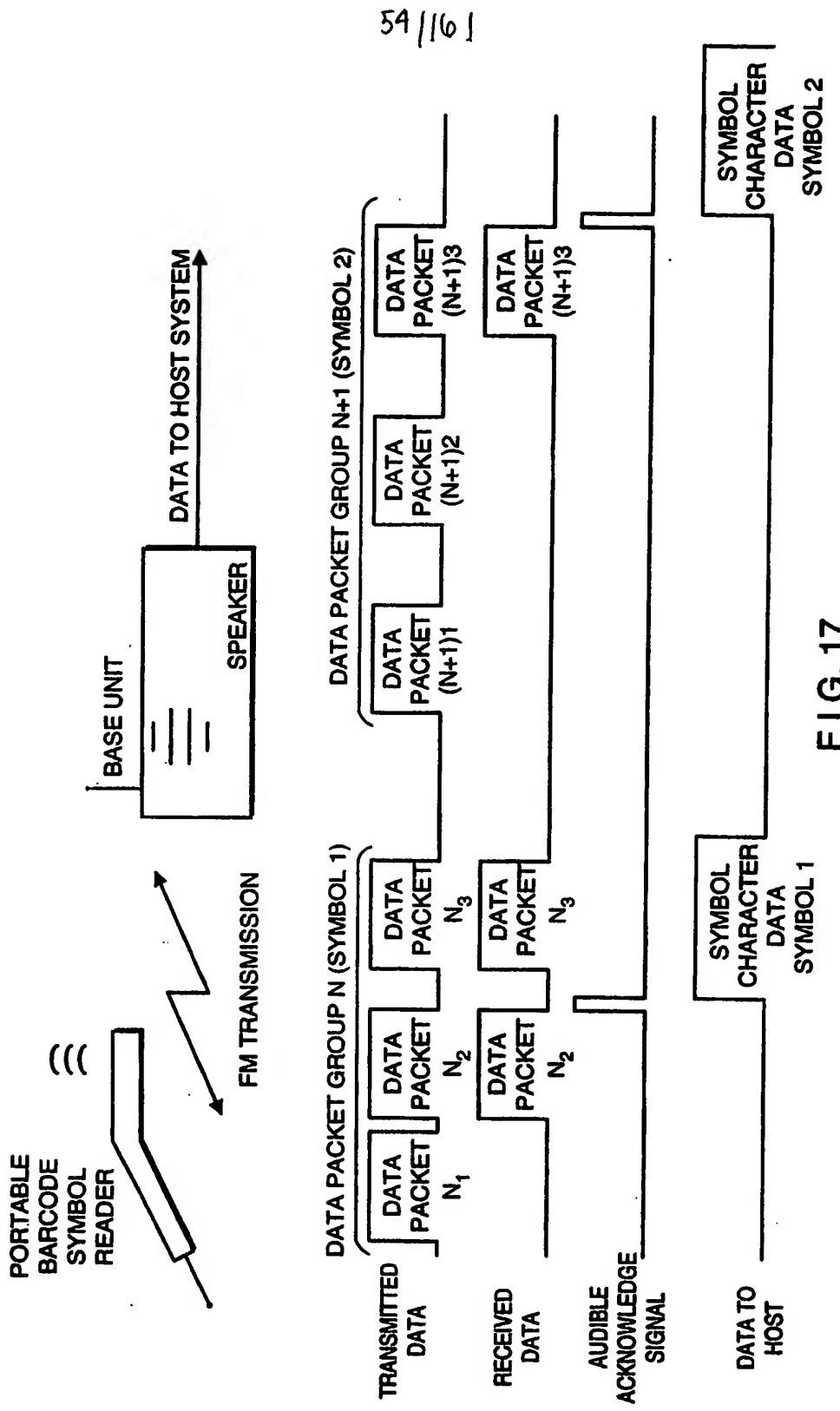
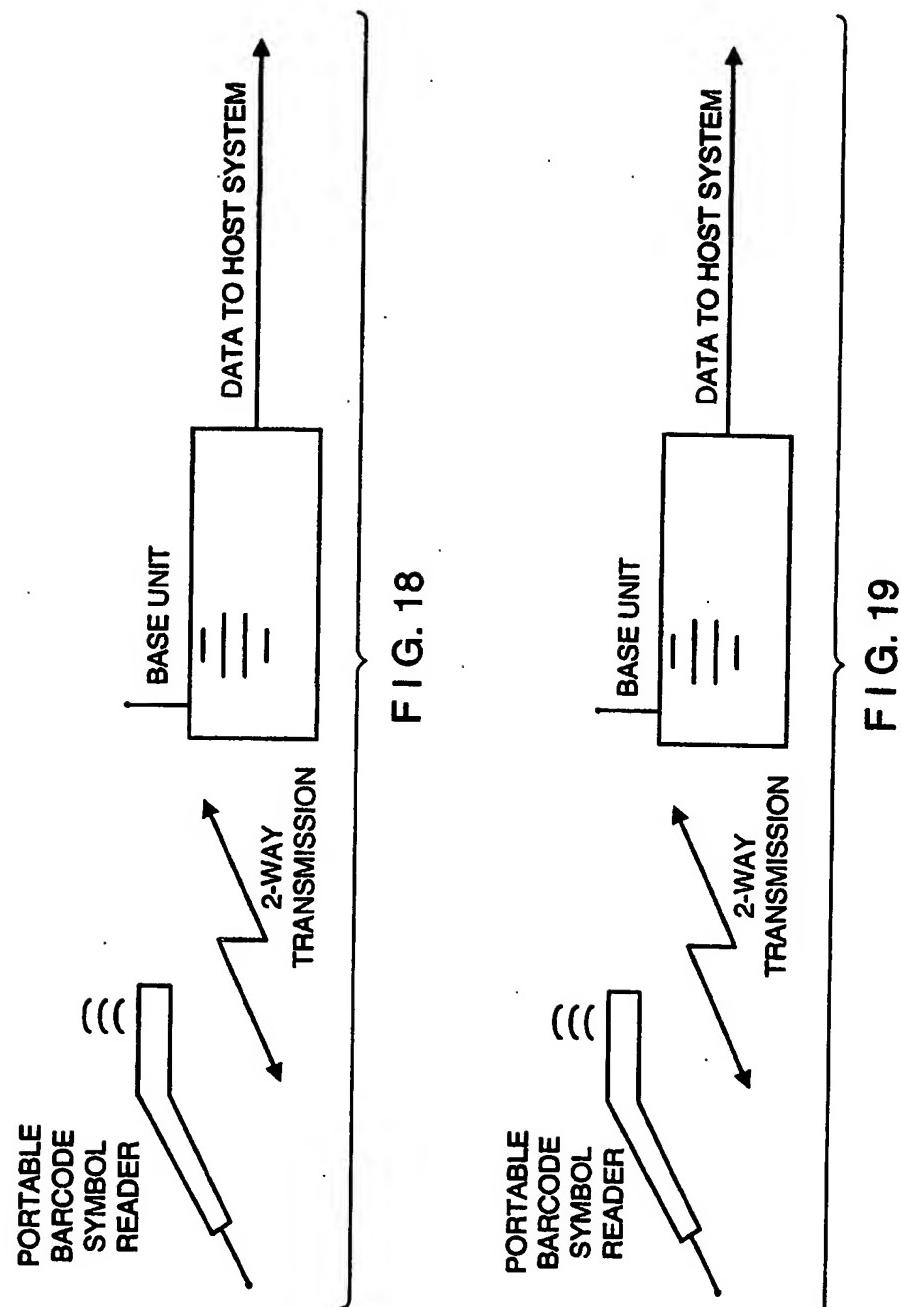


FIG. 17

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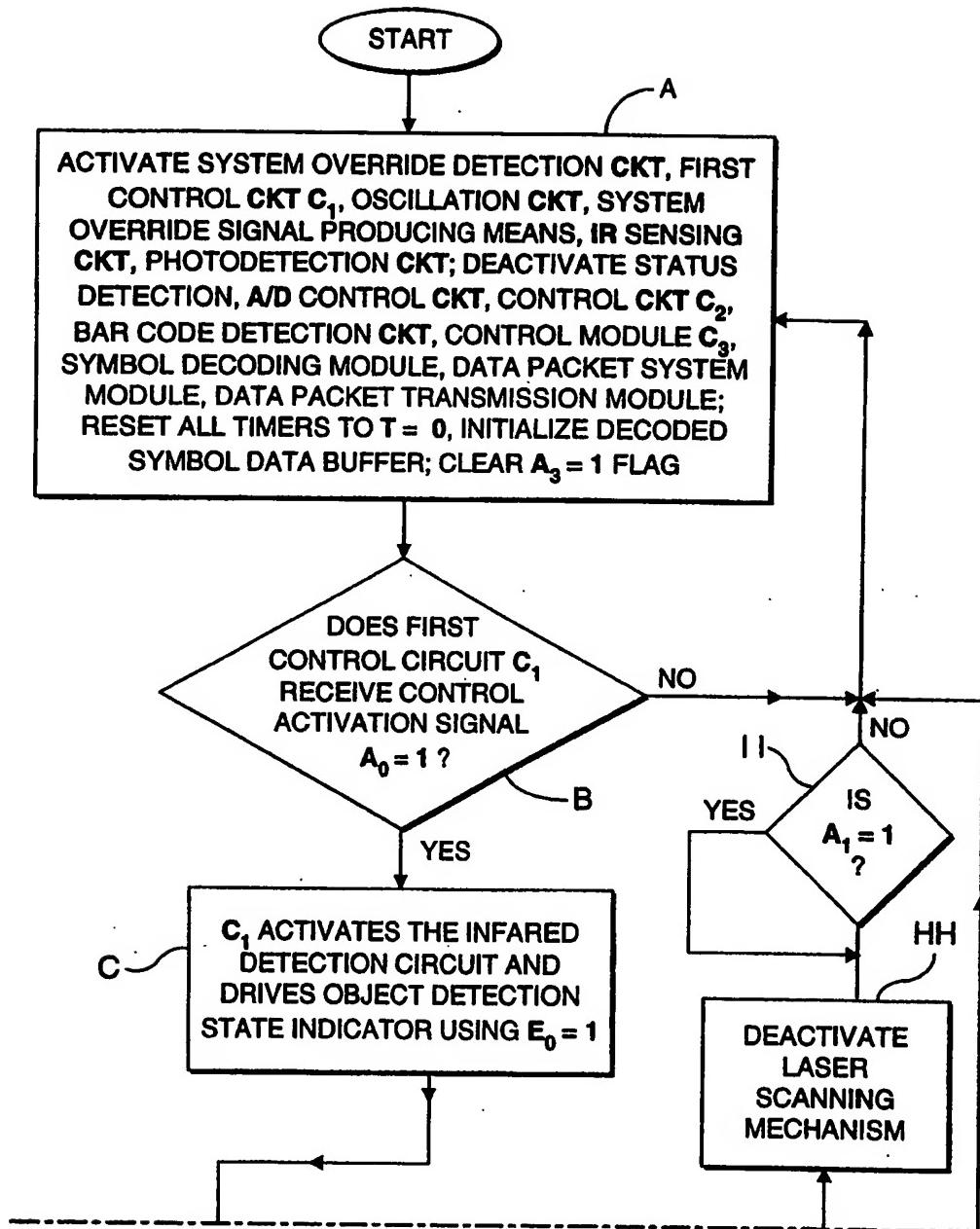


FIG. 20A1

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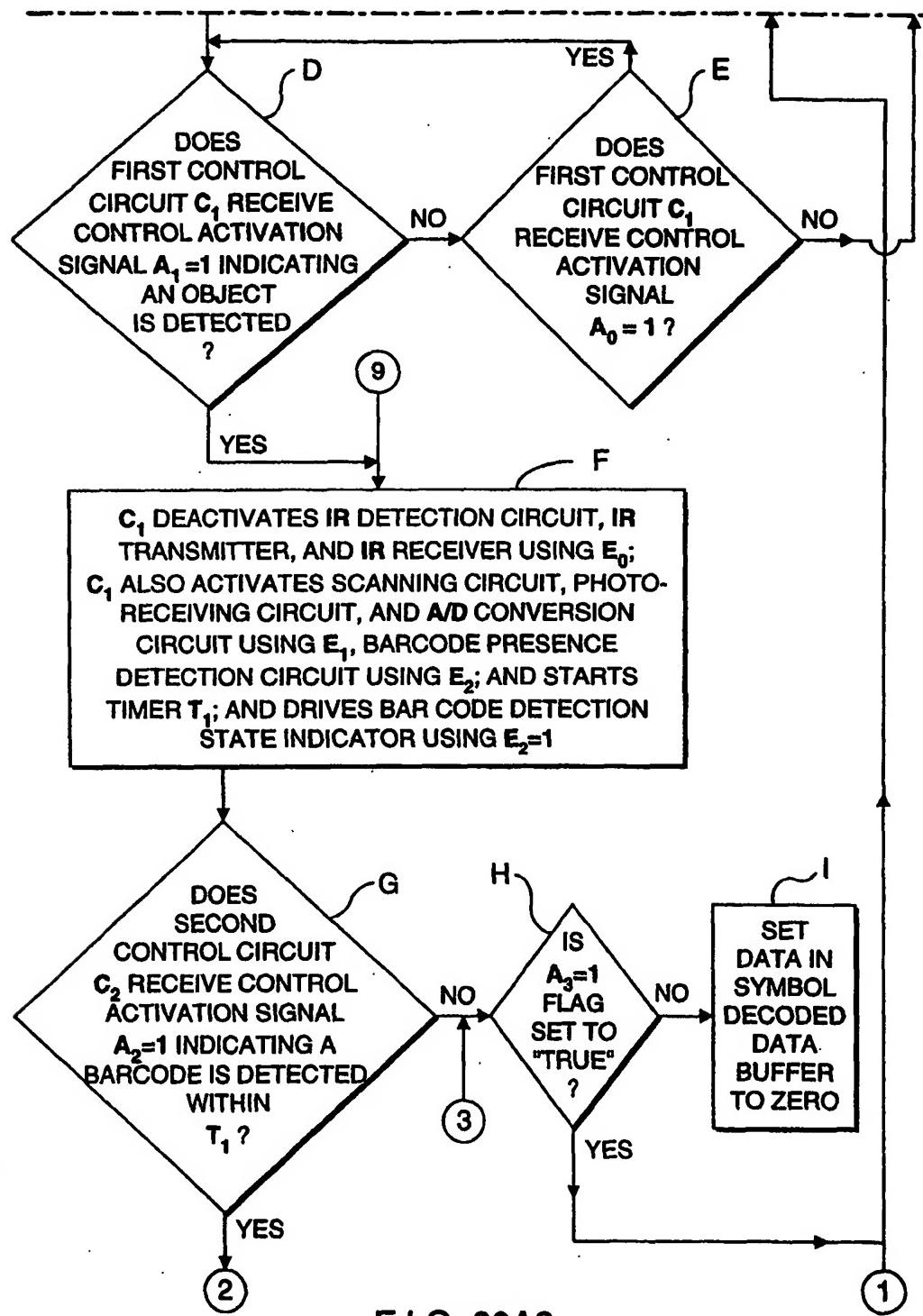


FIG. 20A2

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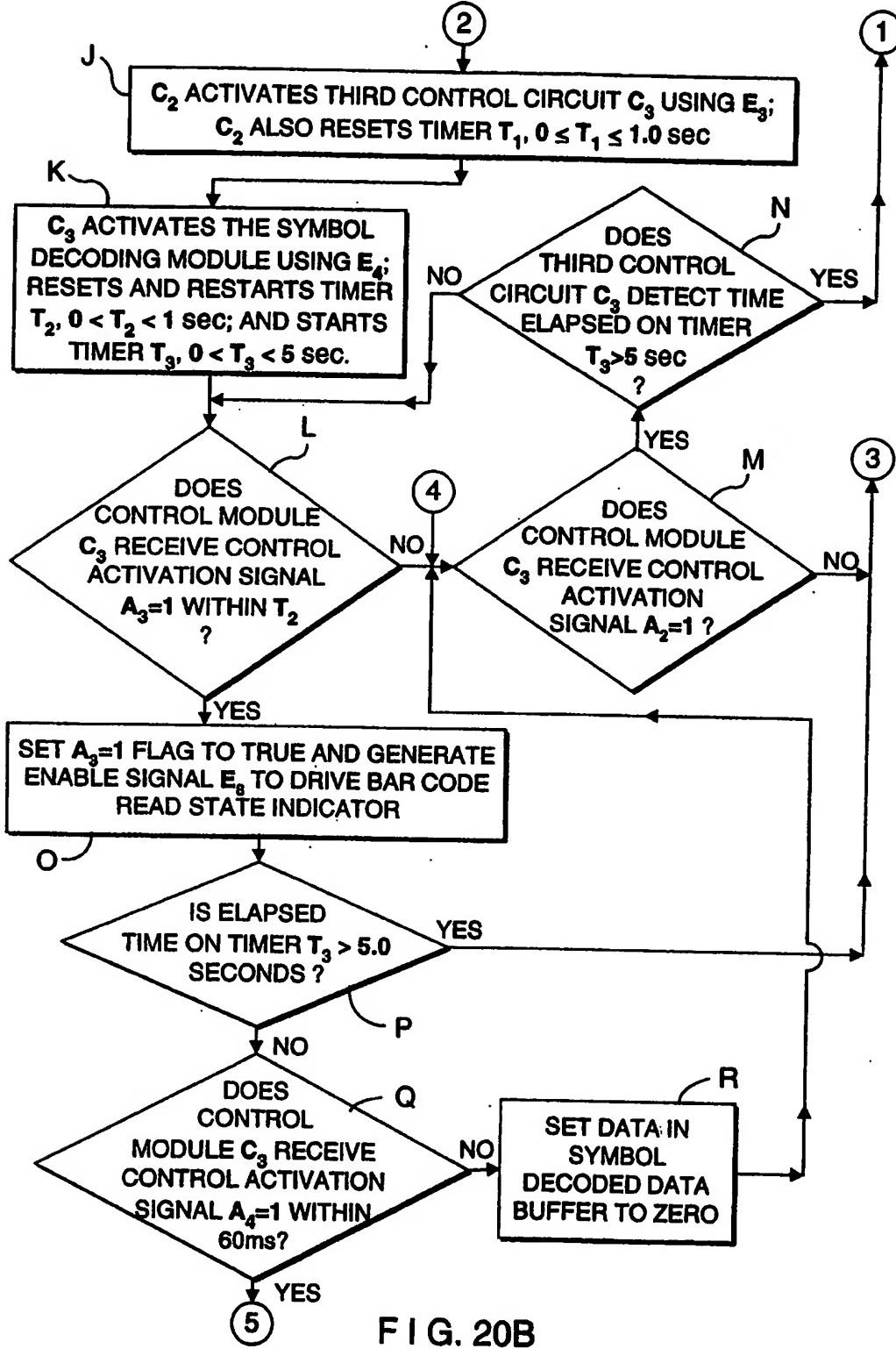
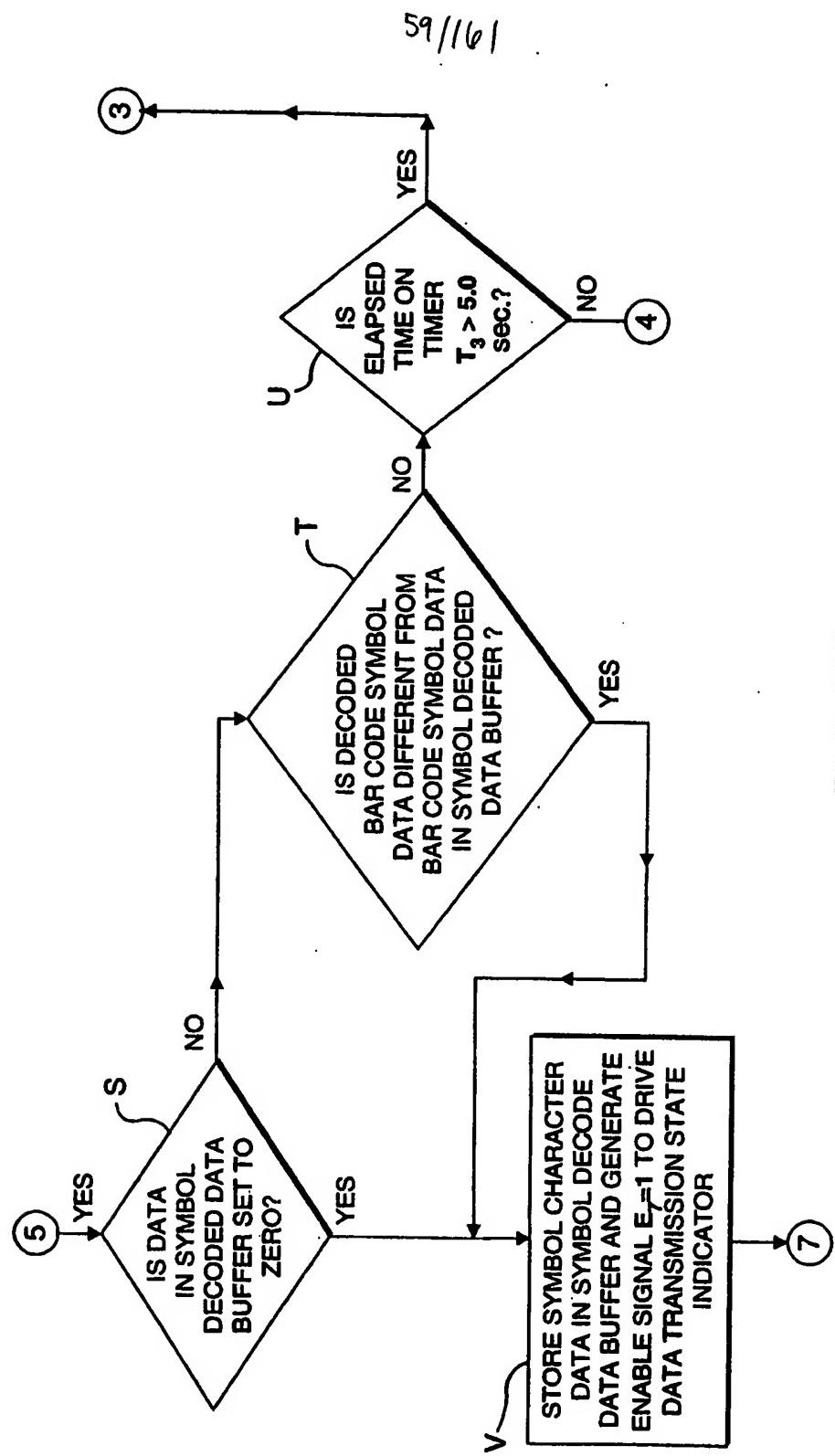


FIG. 20B

FIG. 20C



601171

(7)

THIRD CONTROL CIRCUIT  $C_3$  CONTINUES ACTIVATION OF LASER DIODE, SCANNING MOTOR, PHOTORECEIVING CIRCUIT, A/D CONVERSION CIRCUIT; DEACTIVATES SYMBOL DECODING MODULE; AND COMMENCES ACTIVATION DATA PACKET SYNTHESIS MODULE

W

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE SETS PACKET NUMBER TO 1 AND INCREMENTS DATA PACKET GROUP NUMBER MODULE COUNTER

X

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE CONSTRUCTS DATA PACKET CONSISTING OF SYMBOL CHARACTER DATA, TRANSMITTER NUMBER, DATA PACKET GROUP NUMBER, CHECK CHARACTER AND FRAMING CHARACTERS

Y

$C_3$  ACTIVATES DATA PACKET TRANSMISSION CIRCUIT

Z

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE OUTPUTS PACKET TO DATA PACKET TRANSMISSION CIRCUIT

AA

$C_3$   
DETERMINES  
IS PACKET  
NUMBER < 3  
?

NO

8

YES

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE INCREMENTS DATA PACKET GROUP NUMBER

CC

$C_3$  ALLOWS  $T_5$  TO EXPIRE IN ORDER TO DELAY TRANSMISSION BASED ON LAST TWO DIGITS OF TRANSMITTER NUMBER

DD

FIG. 20D

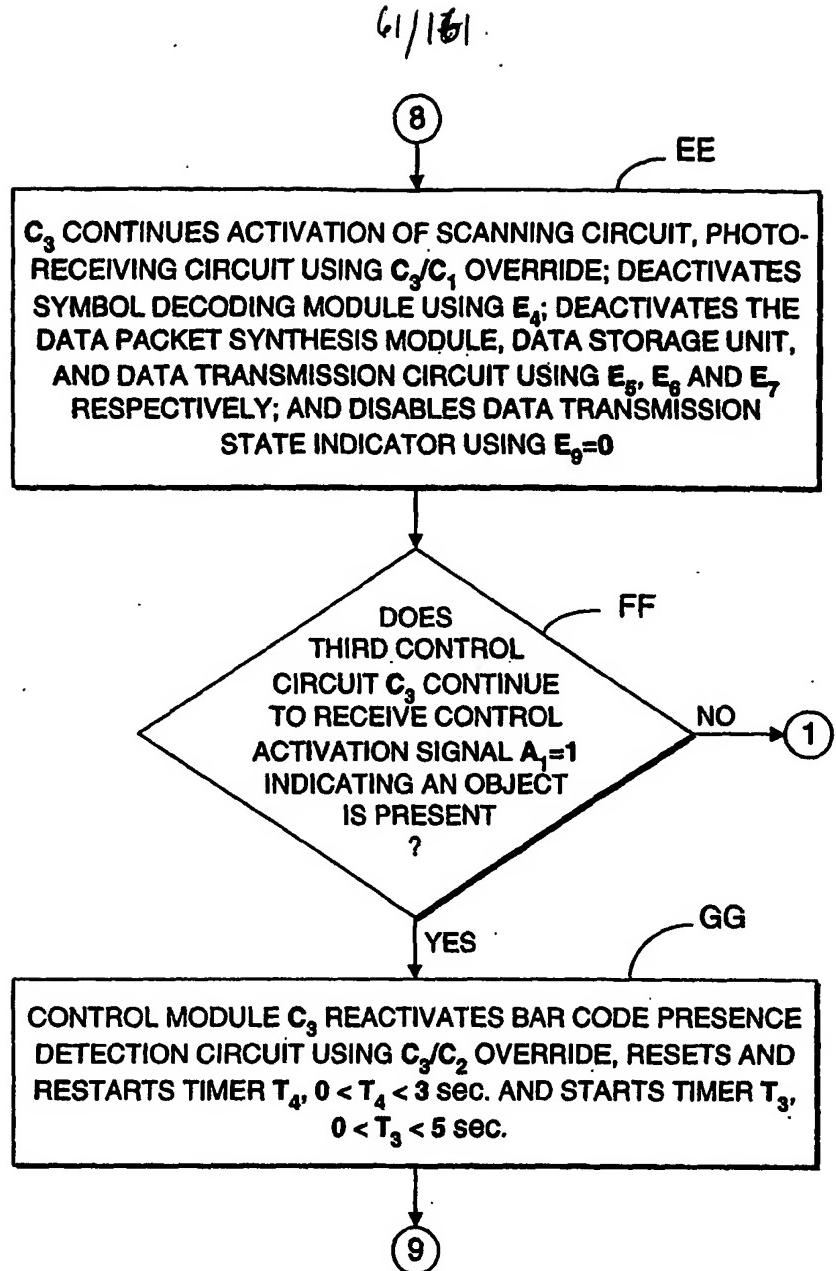
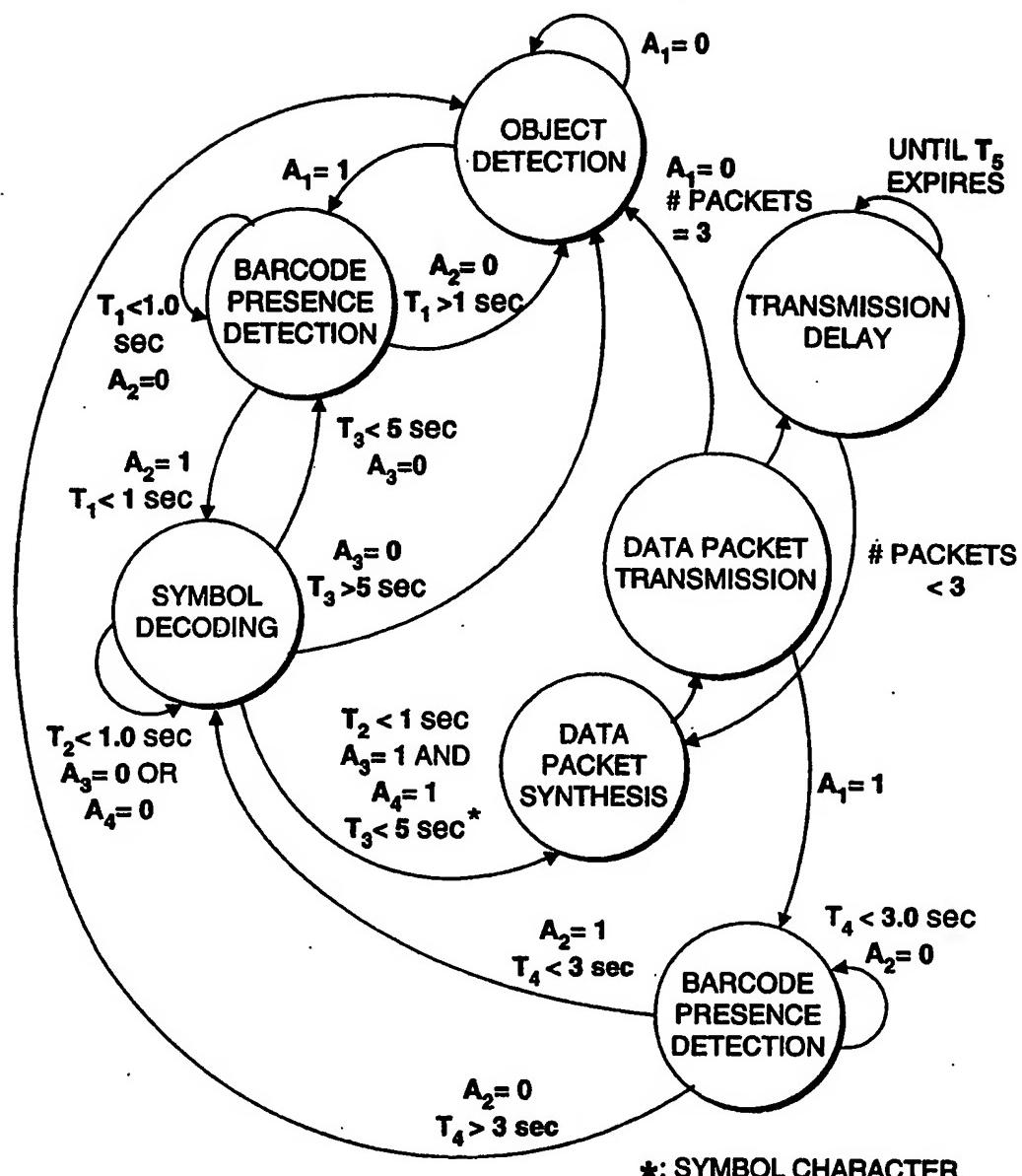


FIG. 20E

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\*: SYMBOL CHARACTER  
DATA IS DIFFERENT  
THAN DATA ELEMENT  
IN DECODED SYMBOL  
DATA BUFFER

FIG. 21

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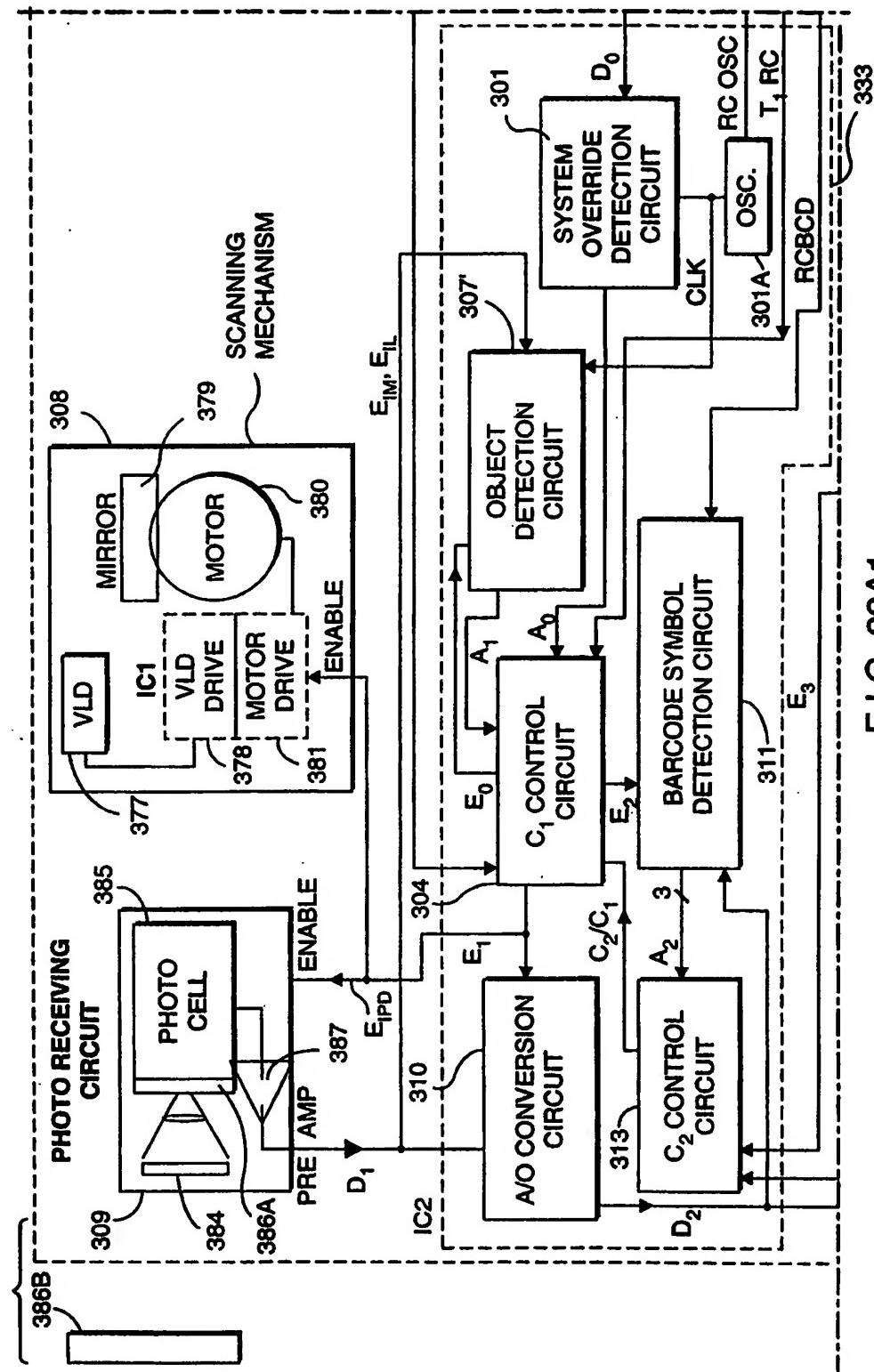


FIG. 22A1

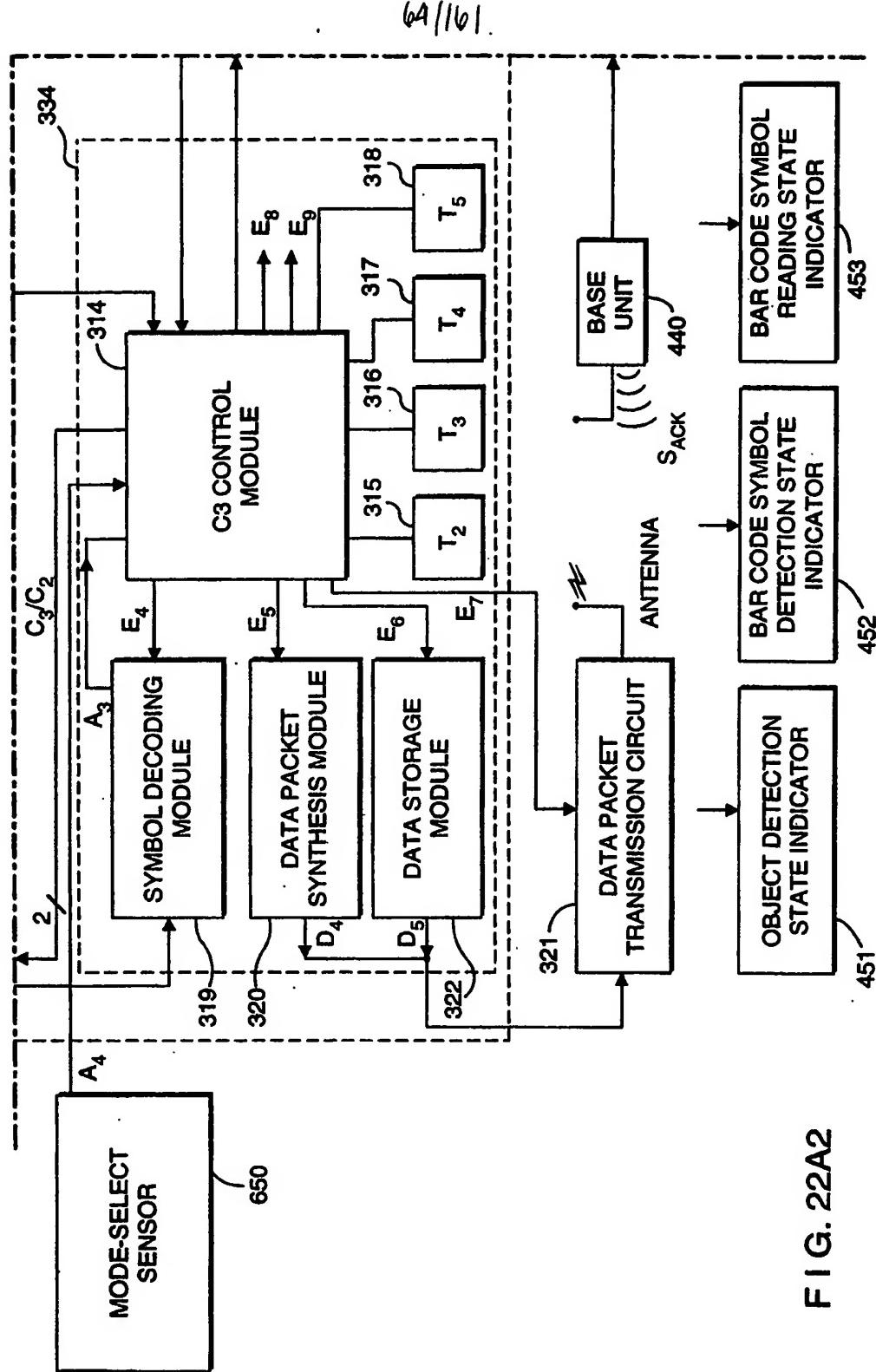
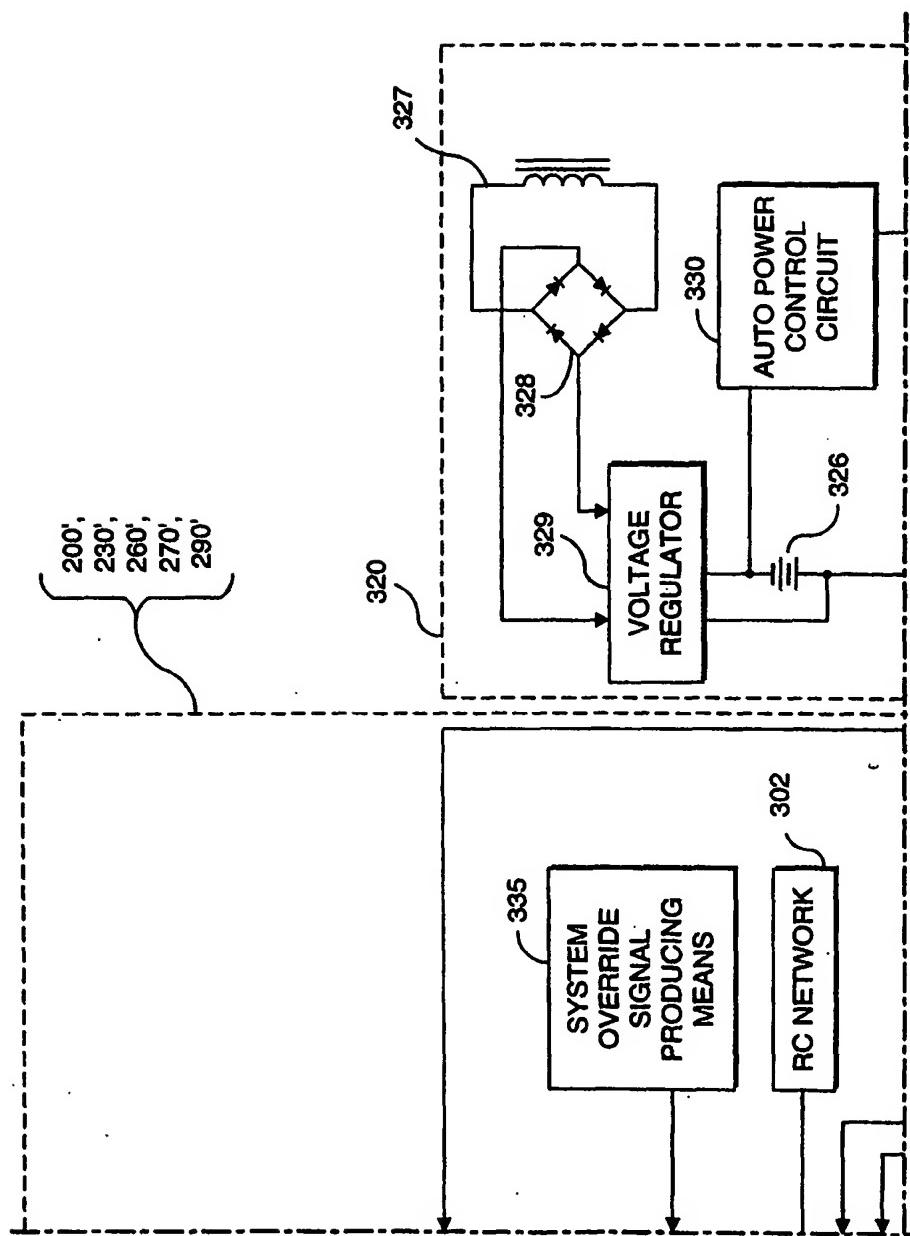


FIG. 22A2

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FIG. 22A3



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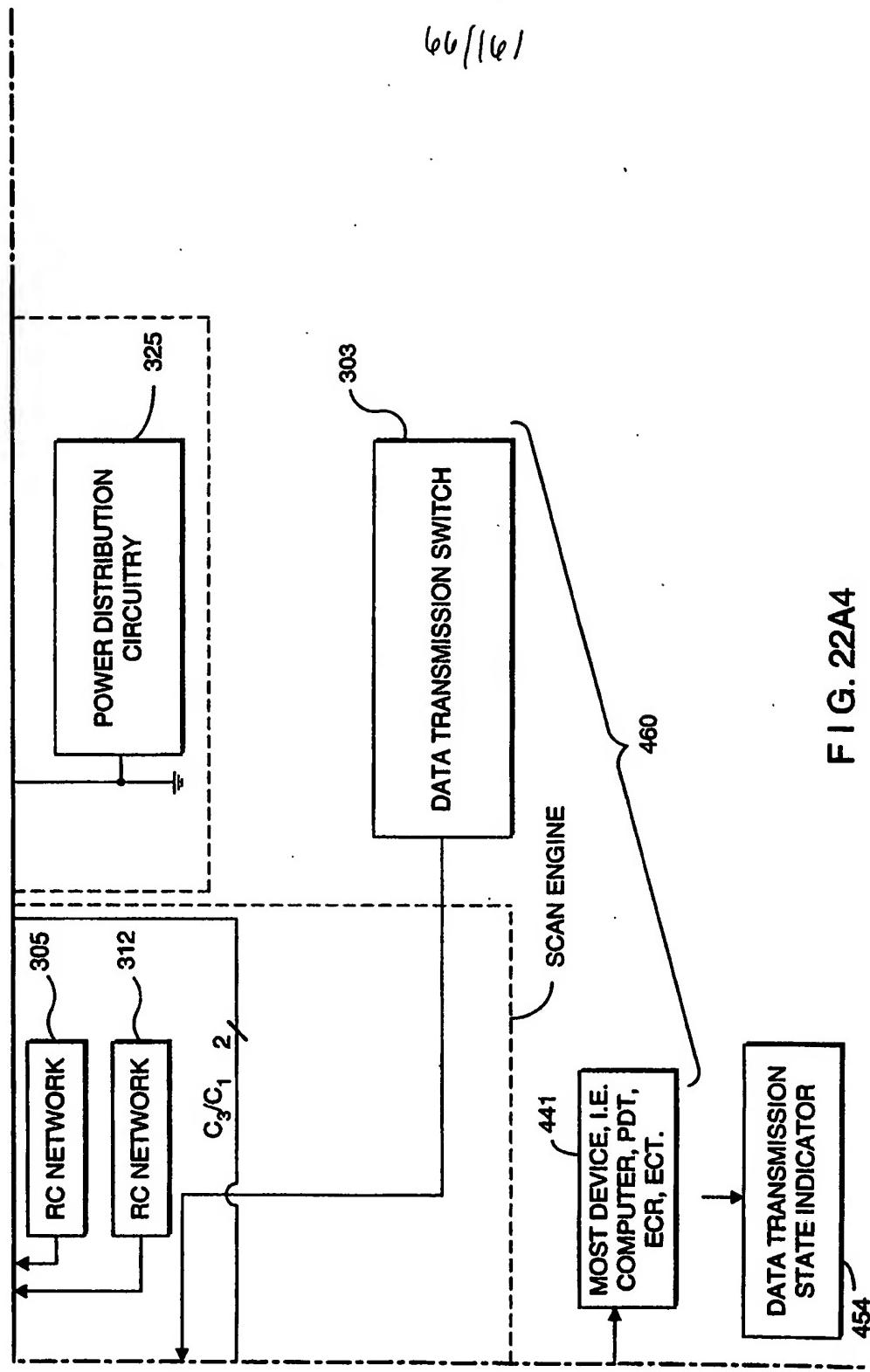


FIG. 22A4

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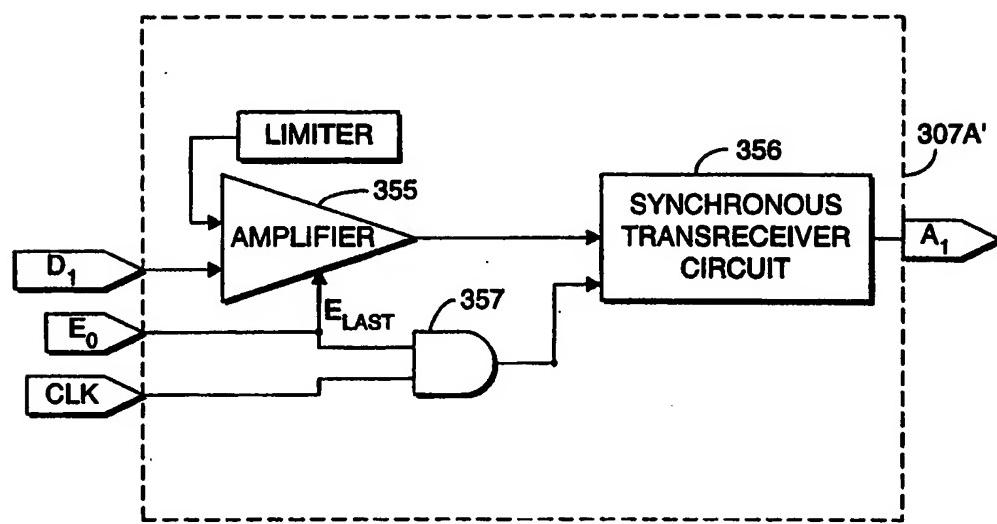
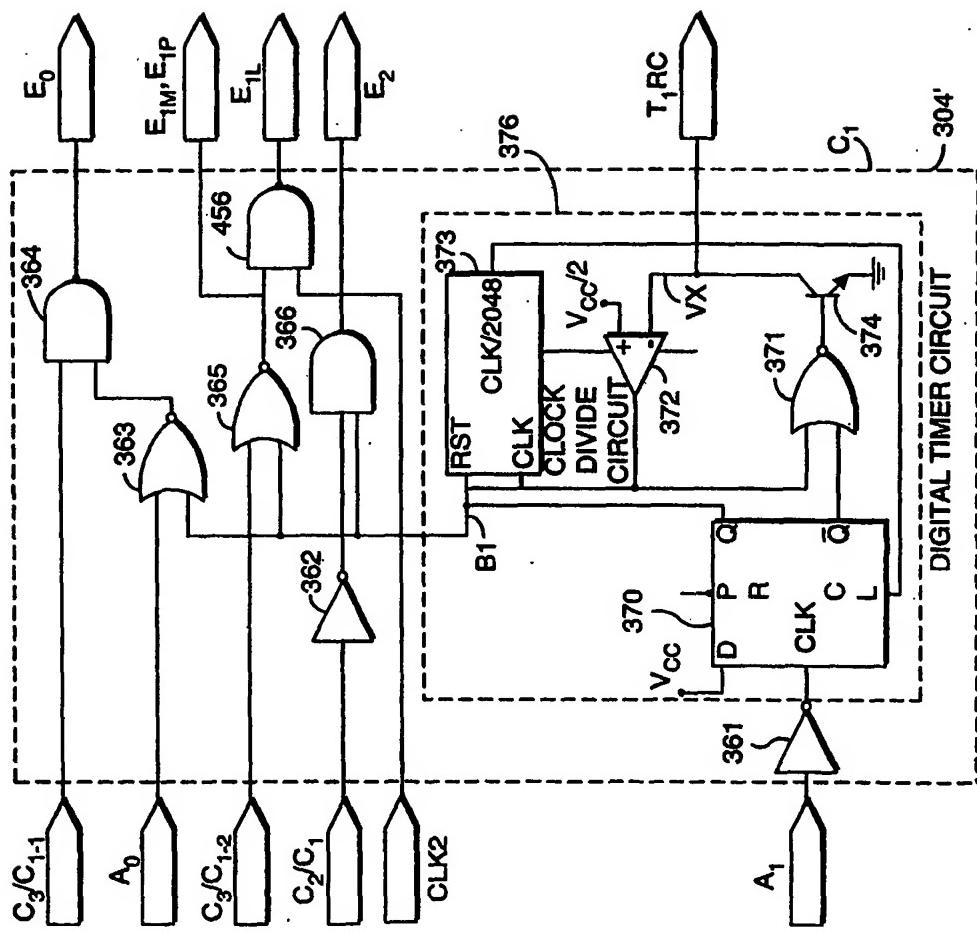


FIG. 22B

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FIG. 22C



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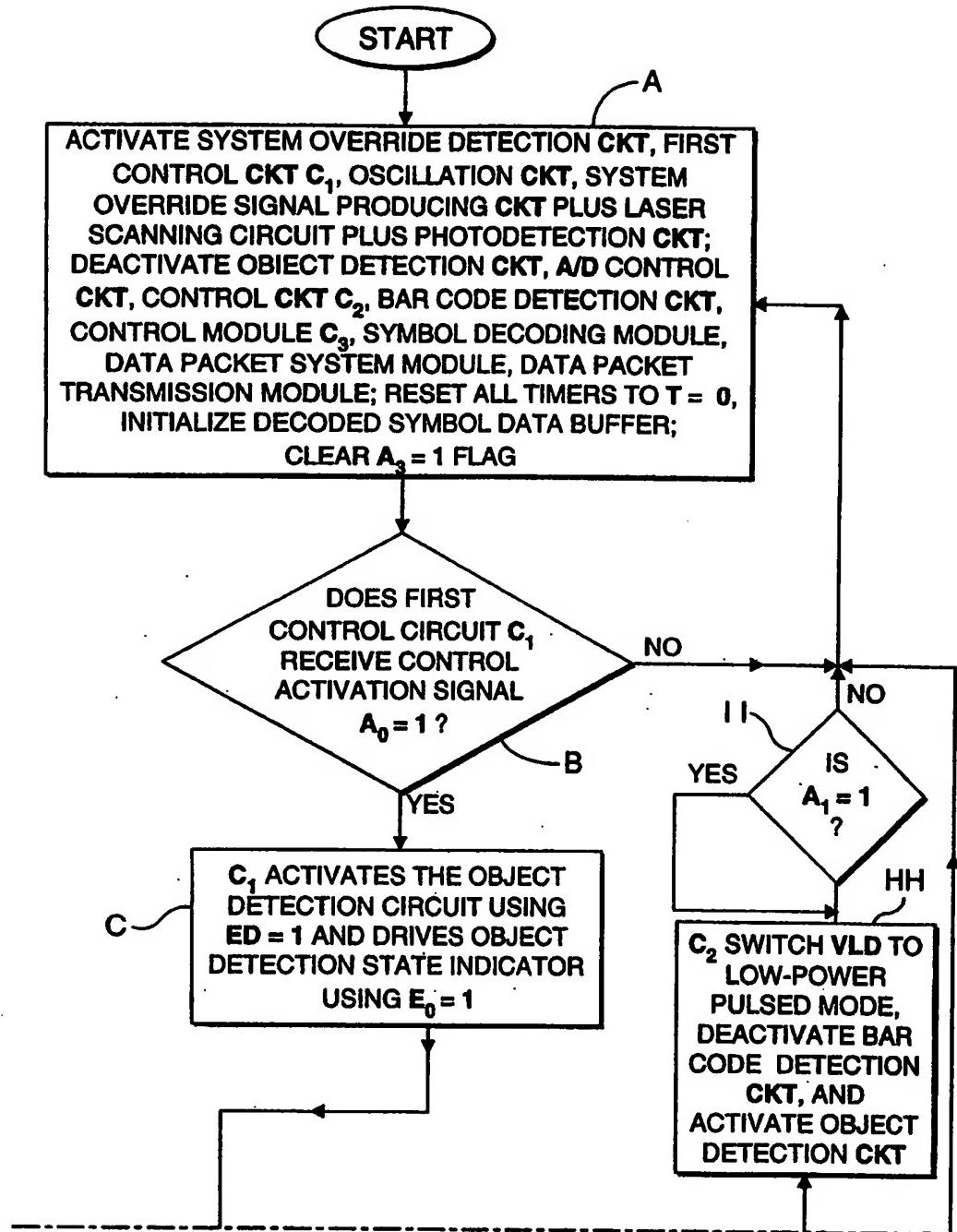


FIG. 23A1

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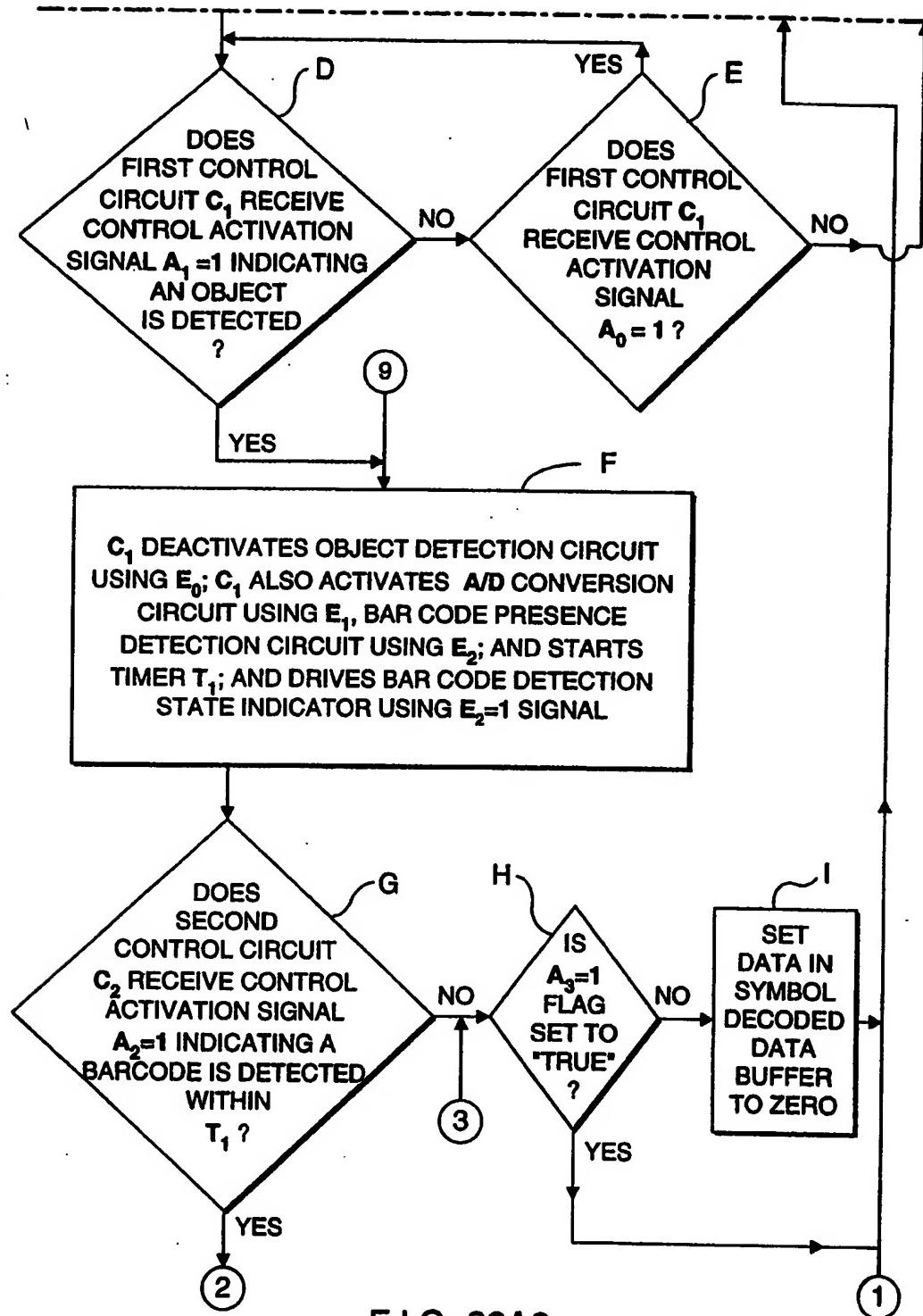


FIG. 23A2

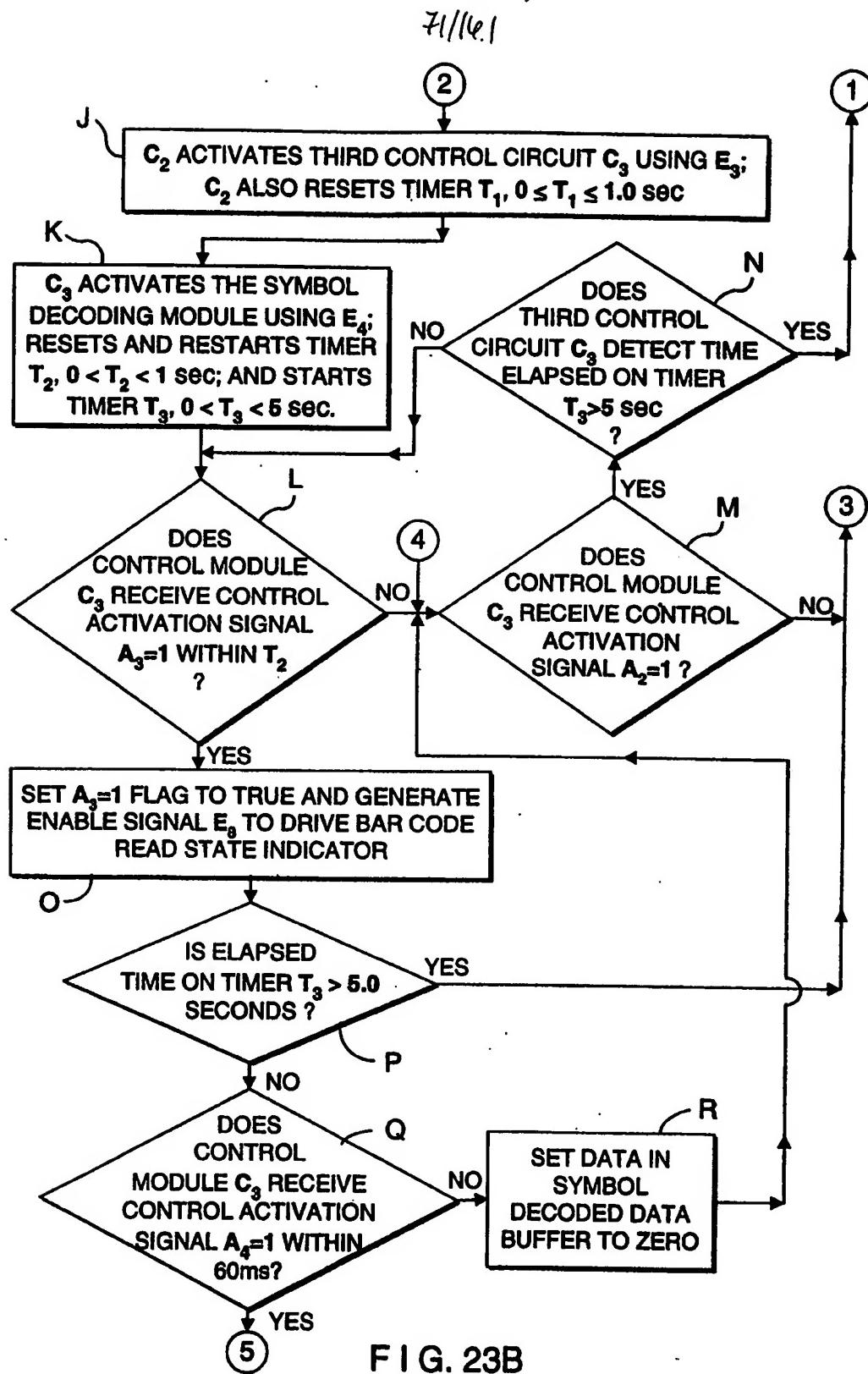
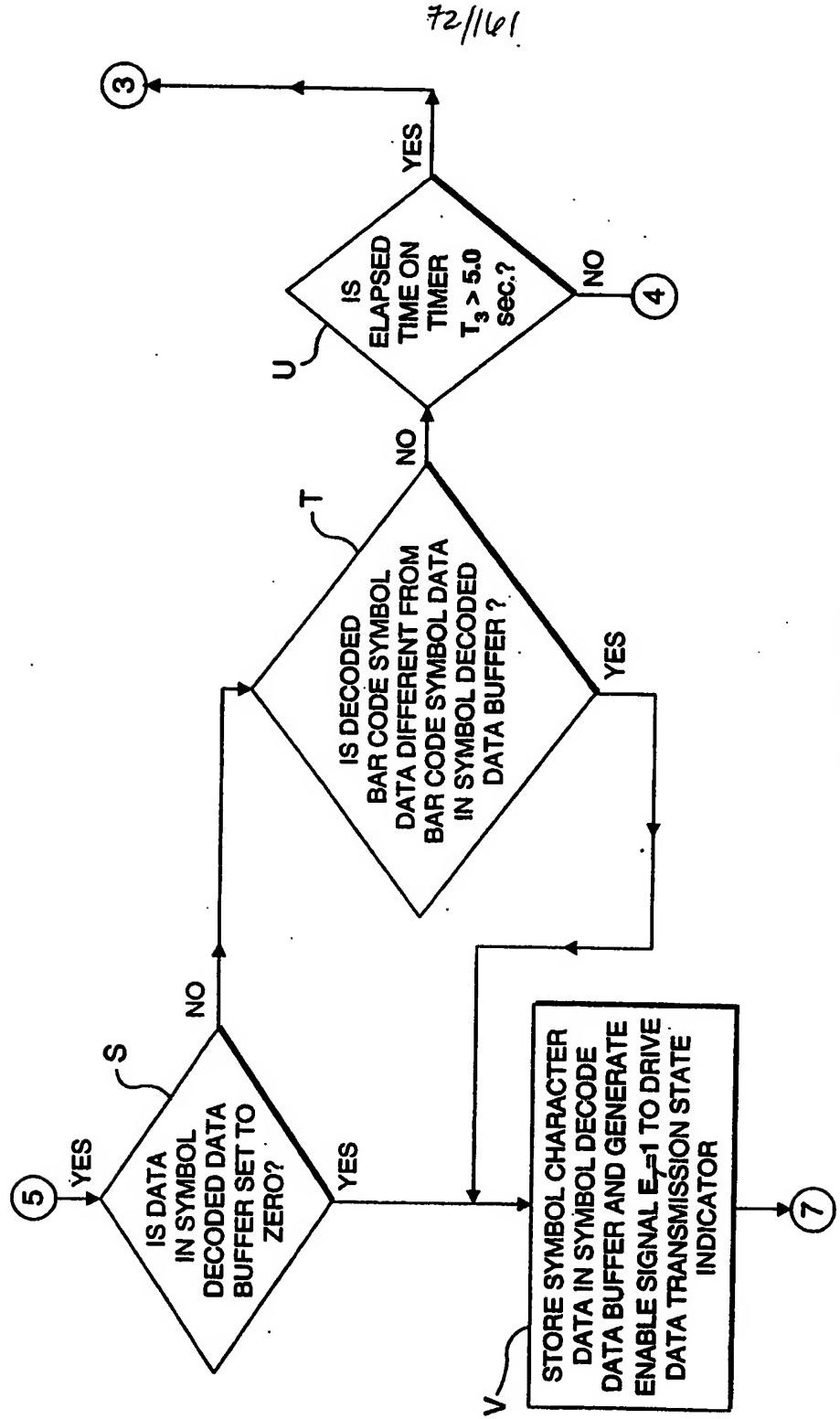


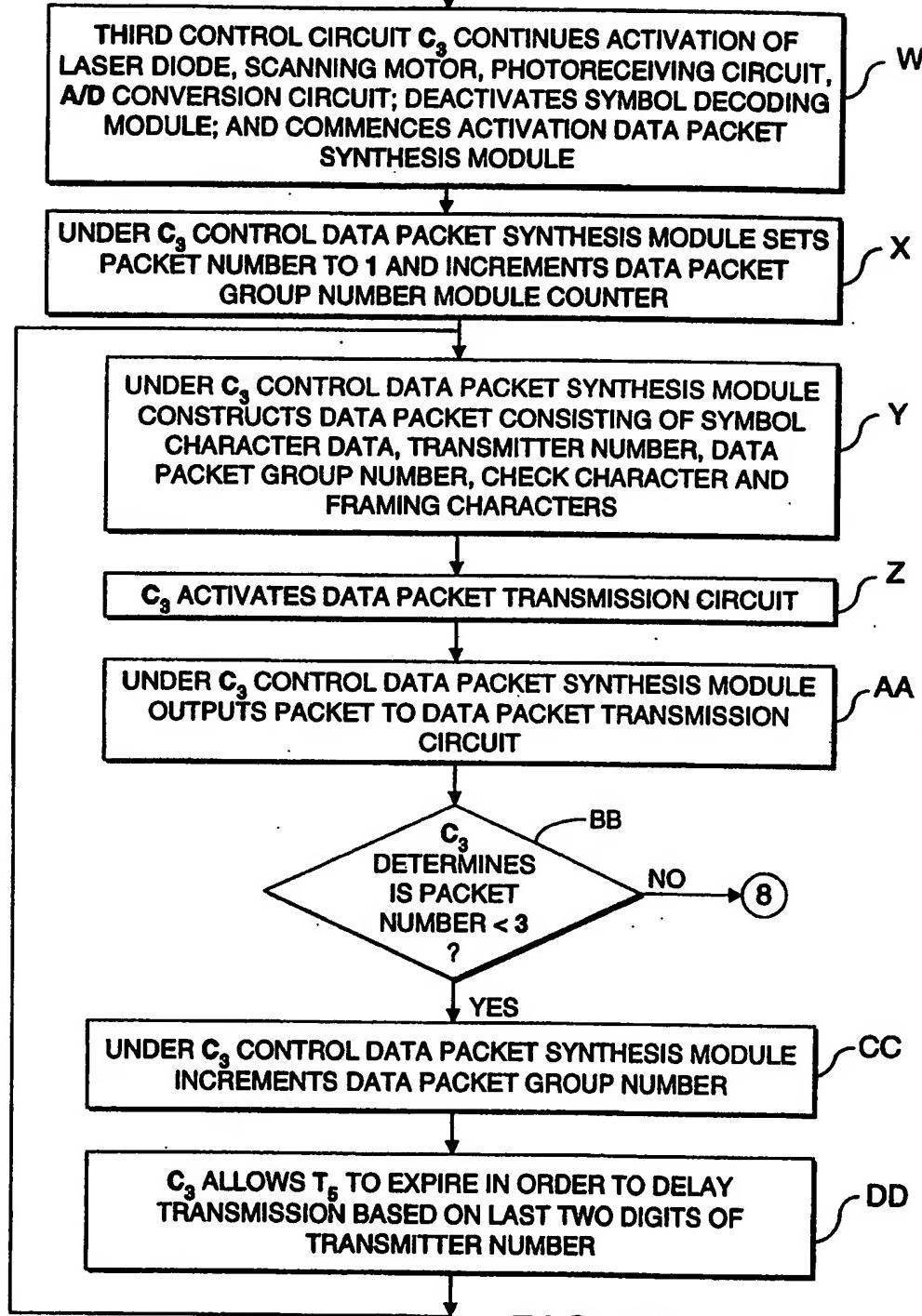
FIG. 23B

FIG. 23C

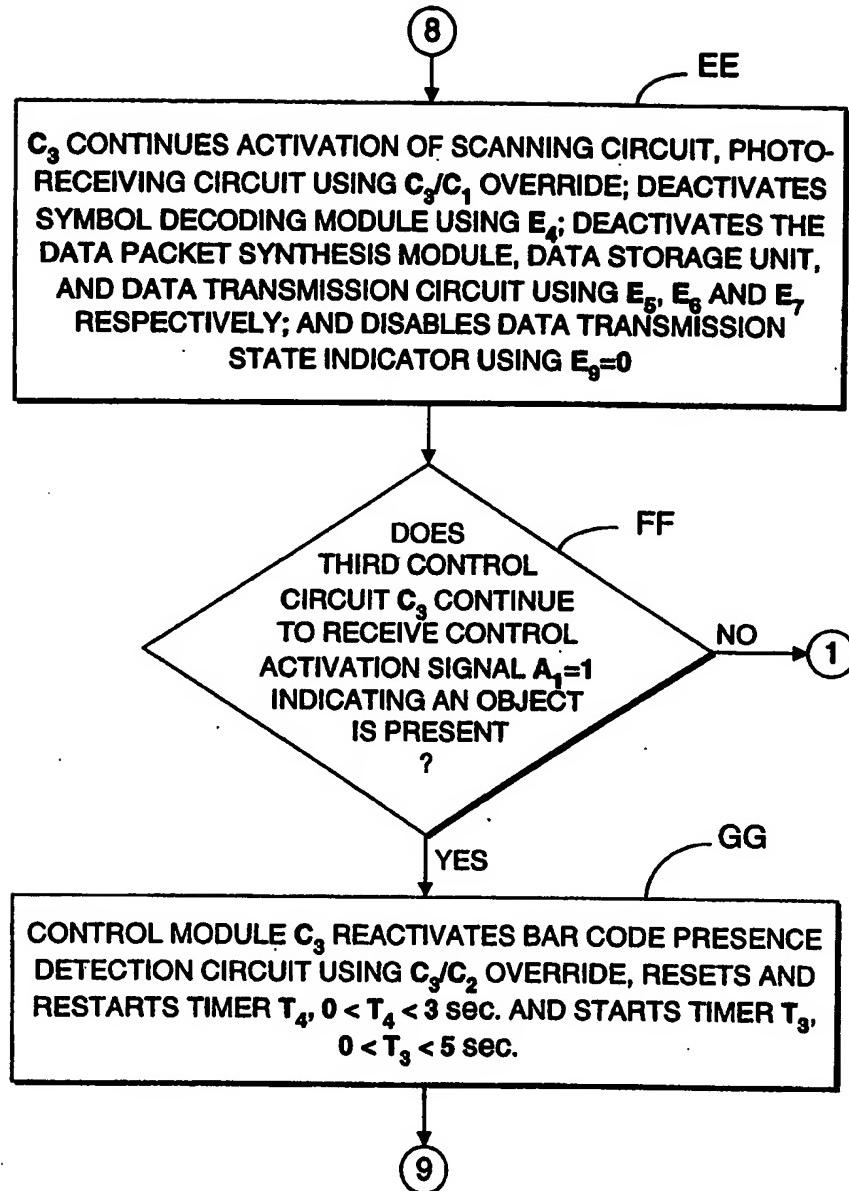


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(7)

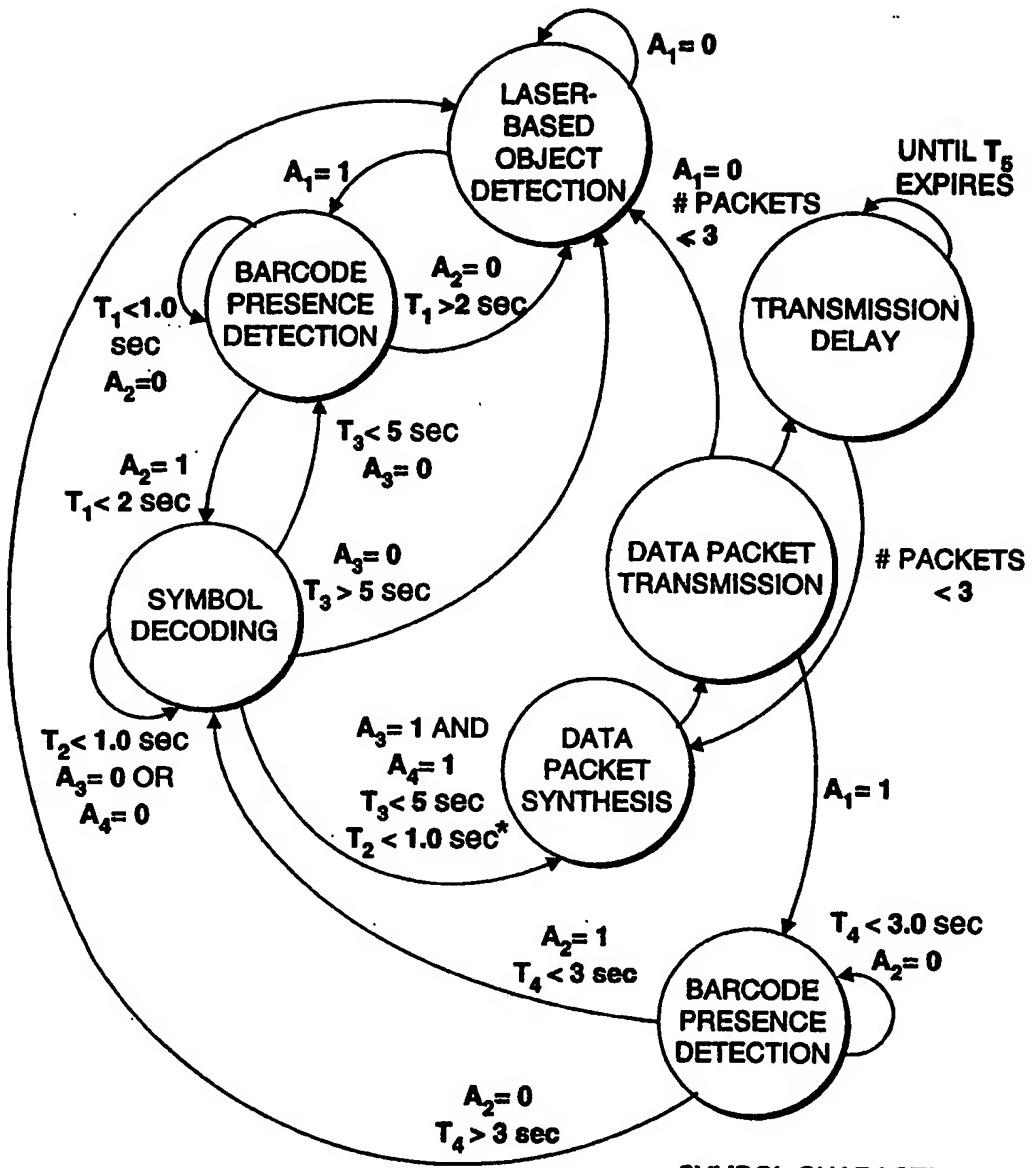


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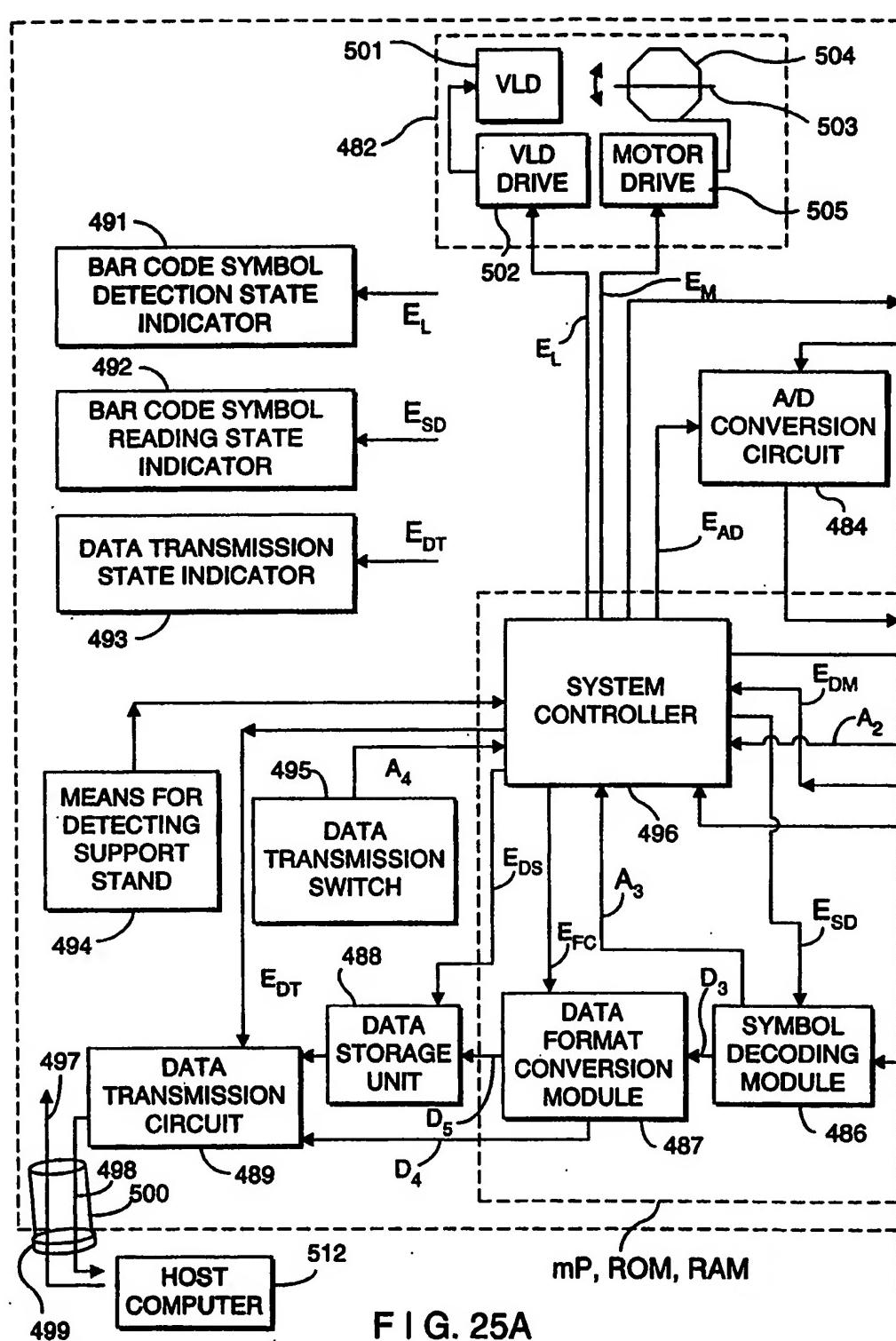
F.I G. 23E

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F I G. 24

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F I G. 25A

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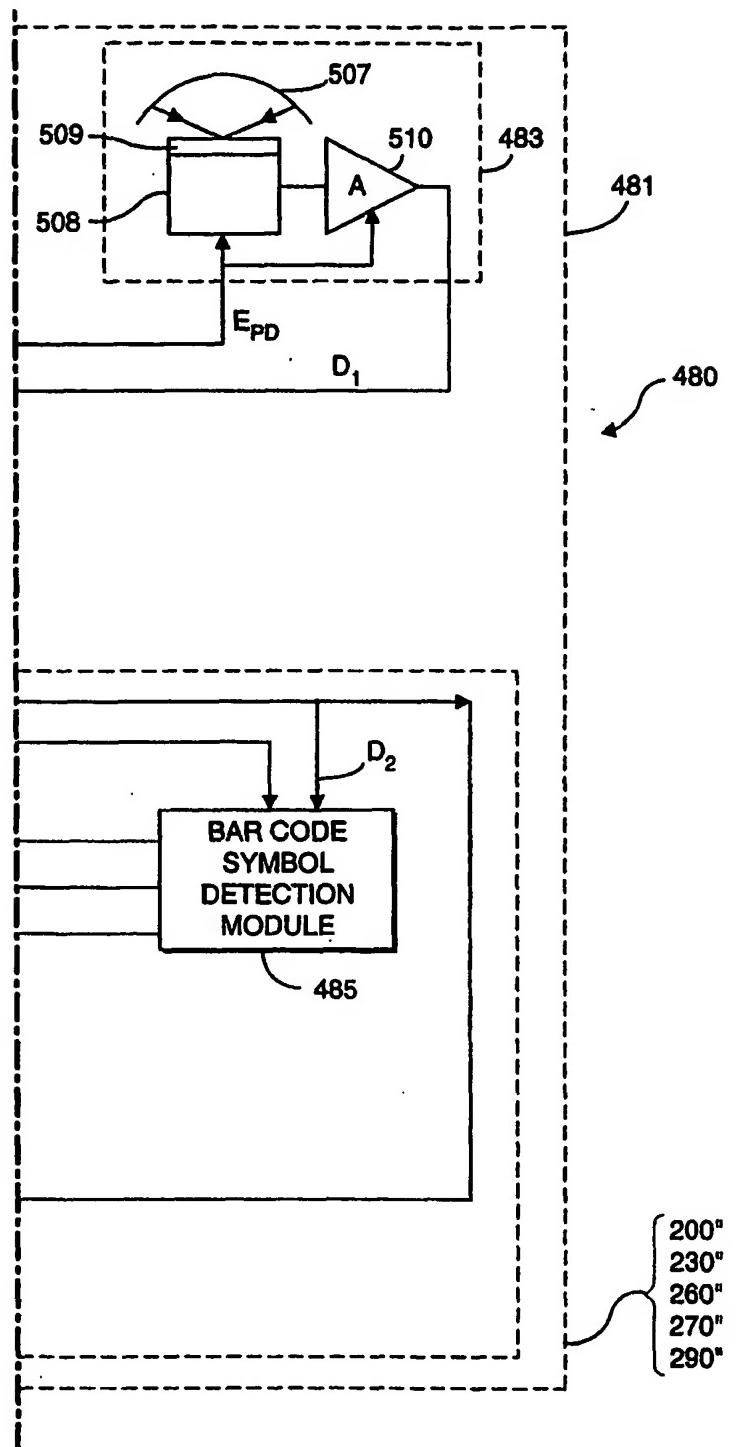


FIG. 25B

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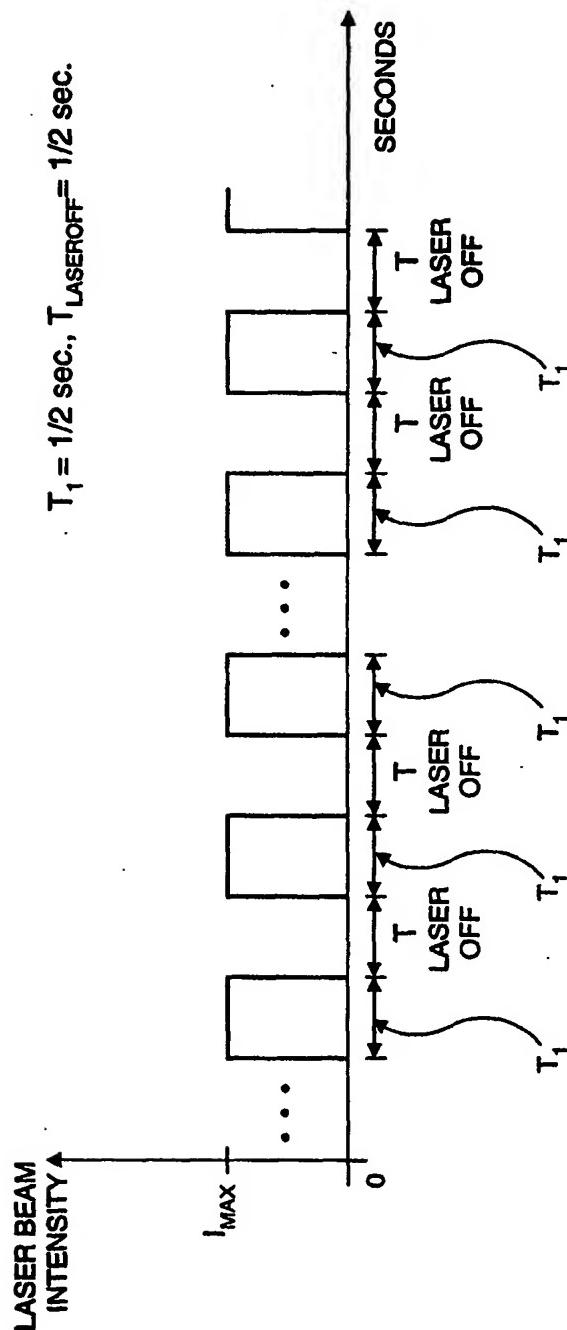


FIG. 26

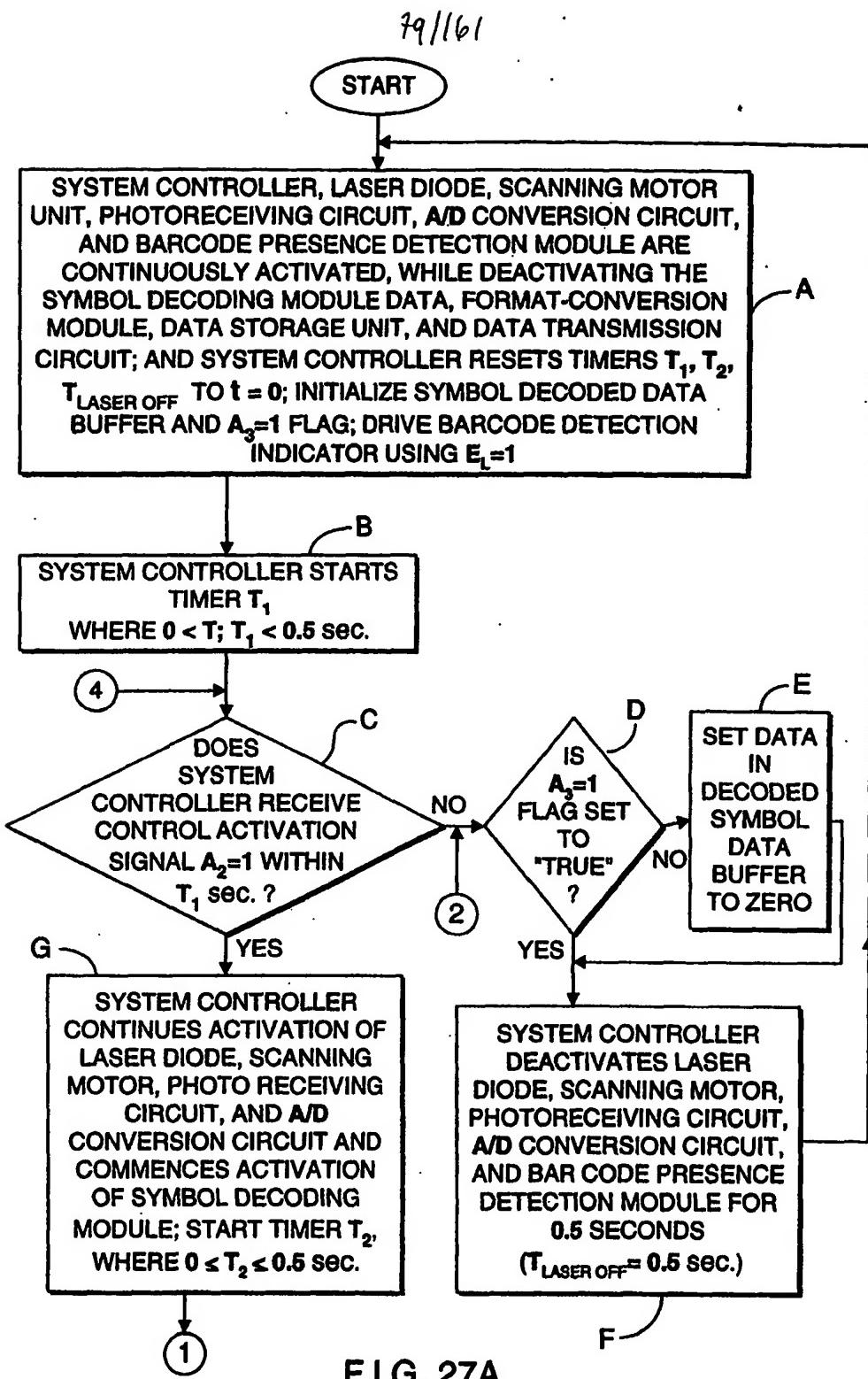
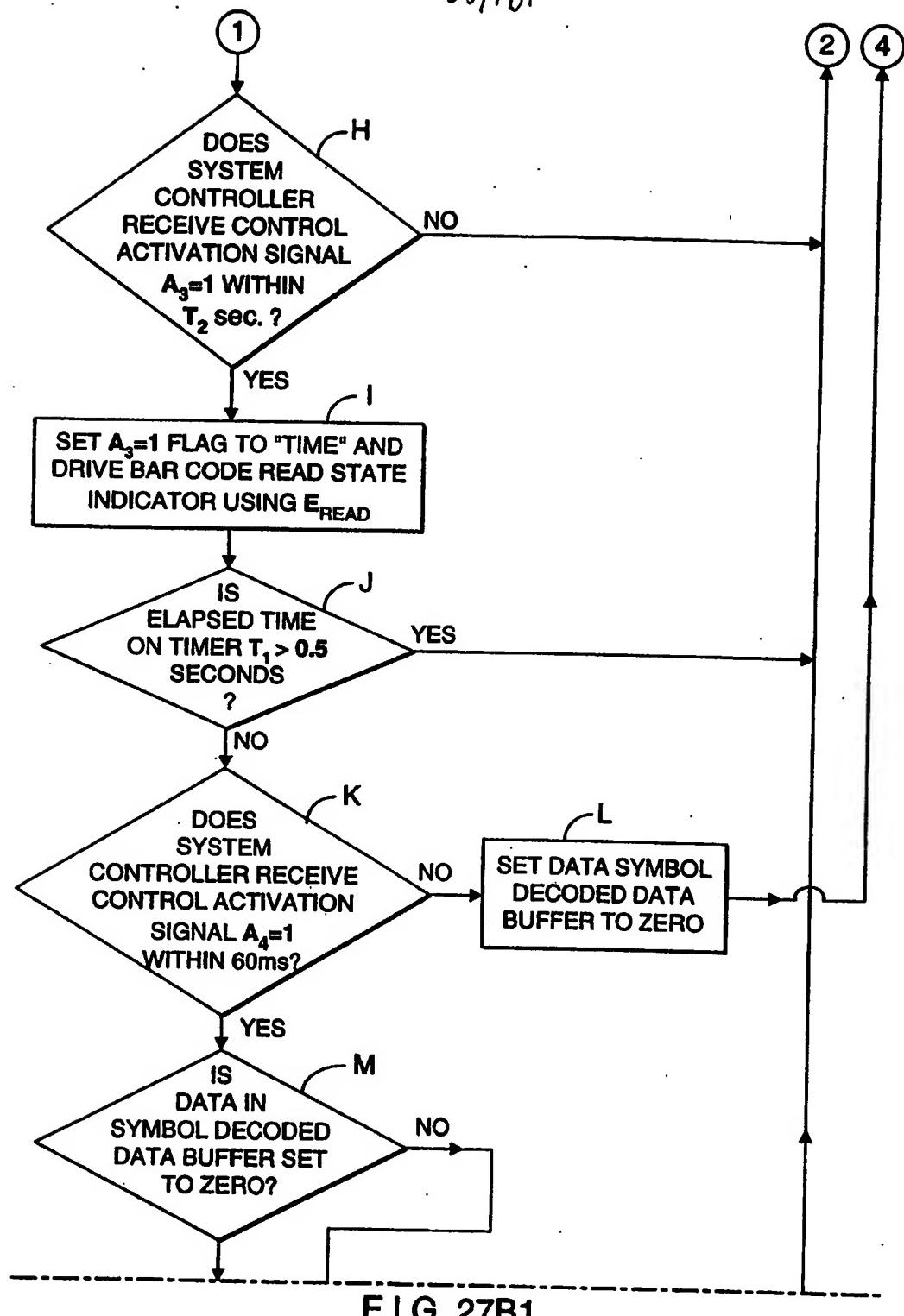


FIG. 27A



**FIG. 27B1**

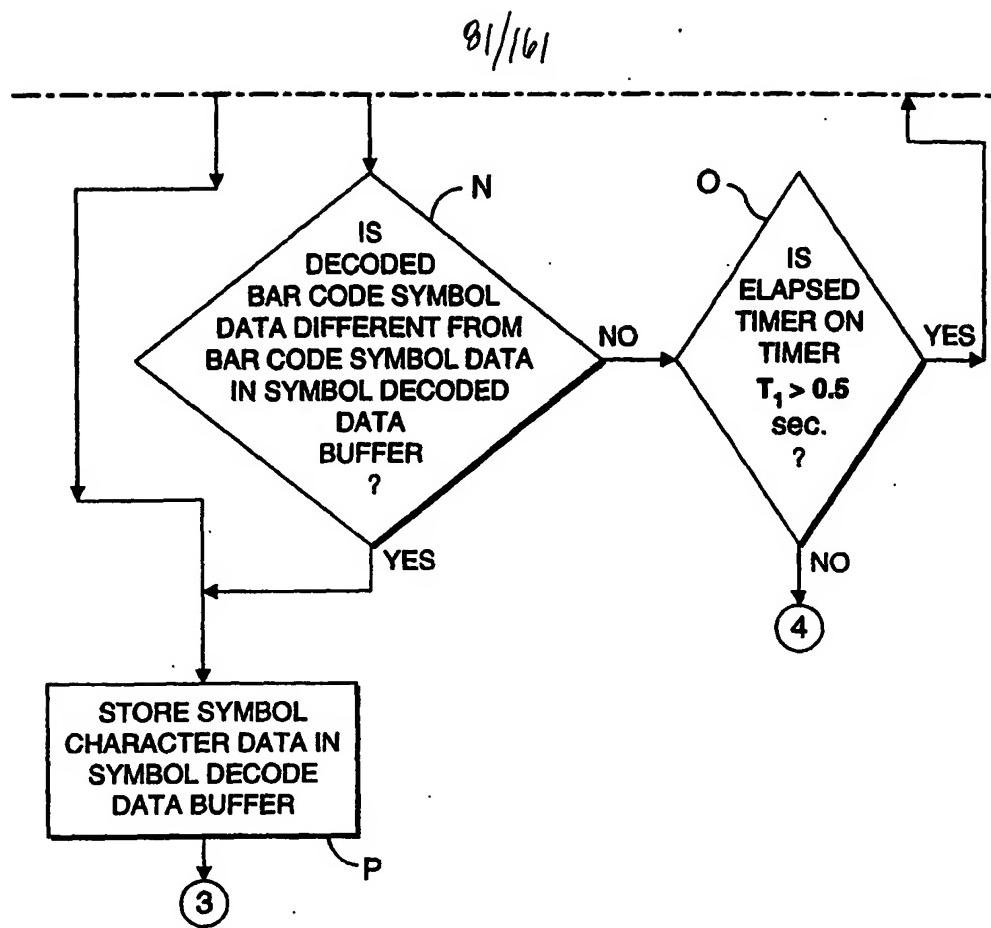


FIG. 27B2

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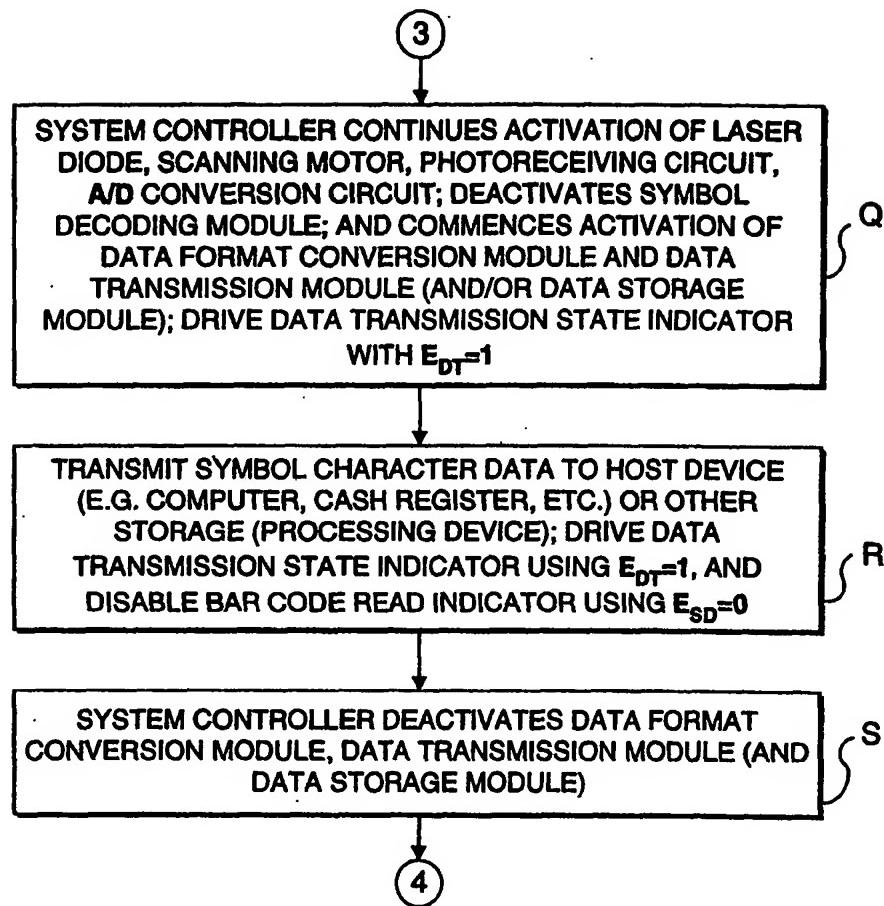
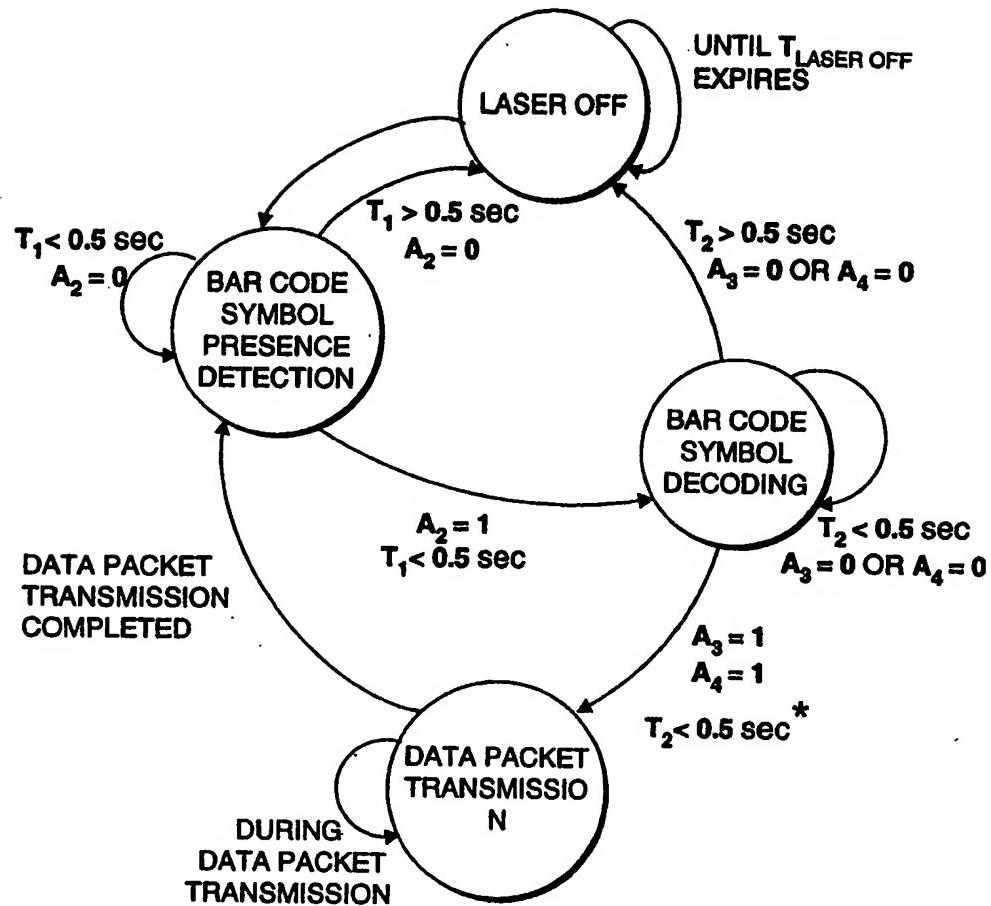


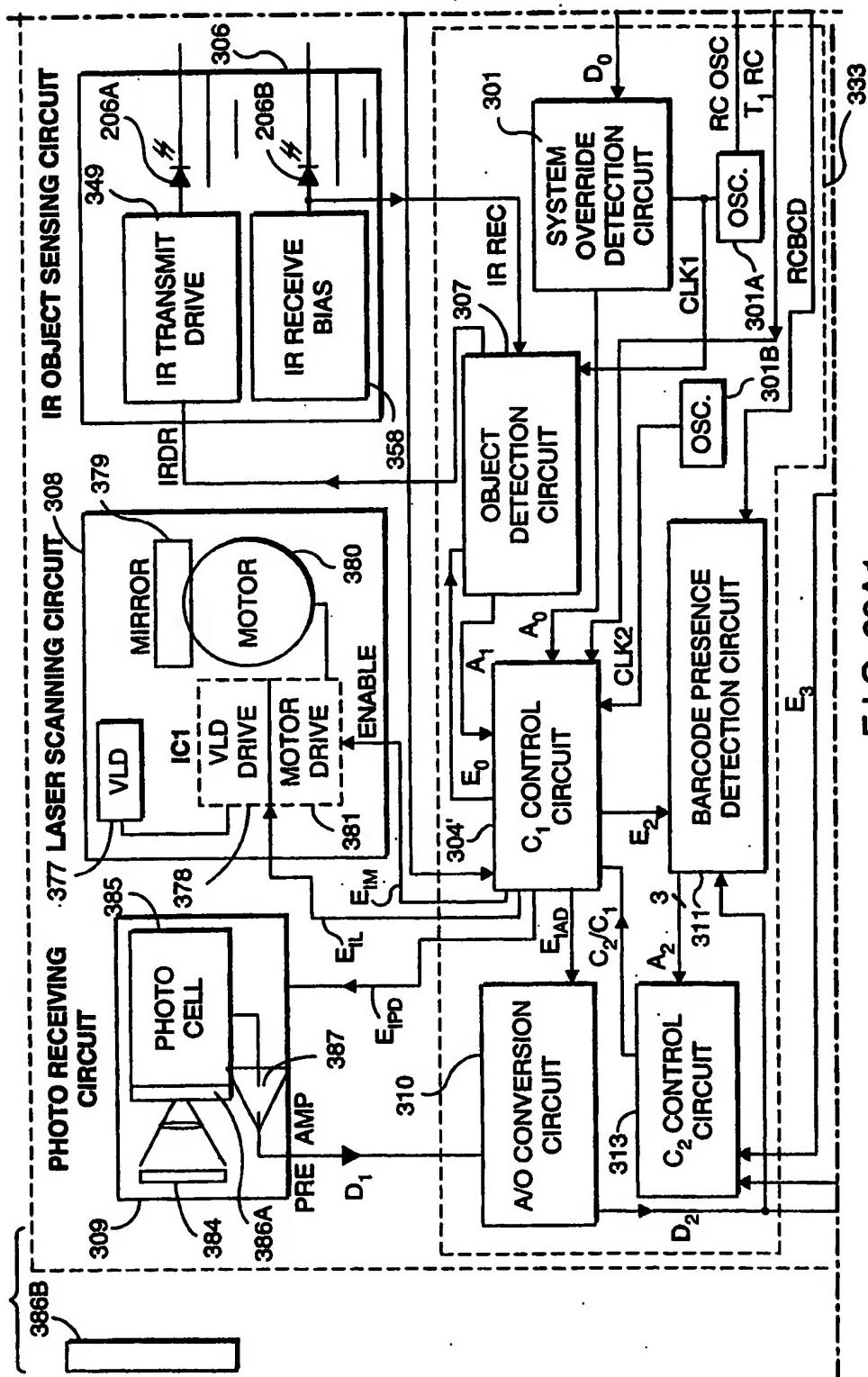
FIG. 27C

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\*: SYMBOL CHARACTER  
DATA IS DIFFERENT  
THAN DATA ELEMENT IN  
DECODED SYMBOL DATA  
BUFFER

FIG. 28



F I G. 29A1

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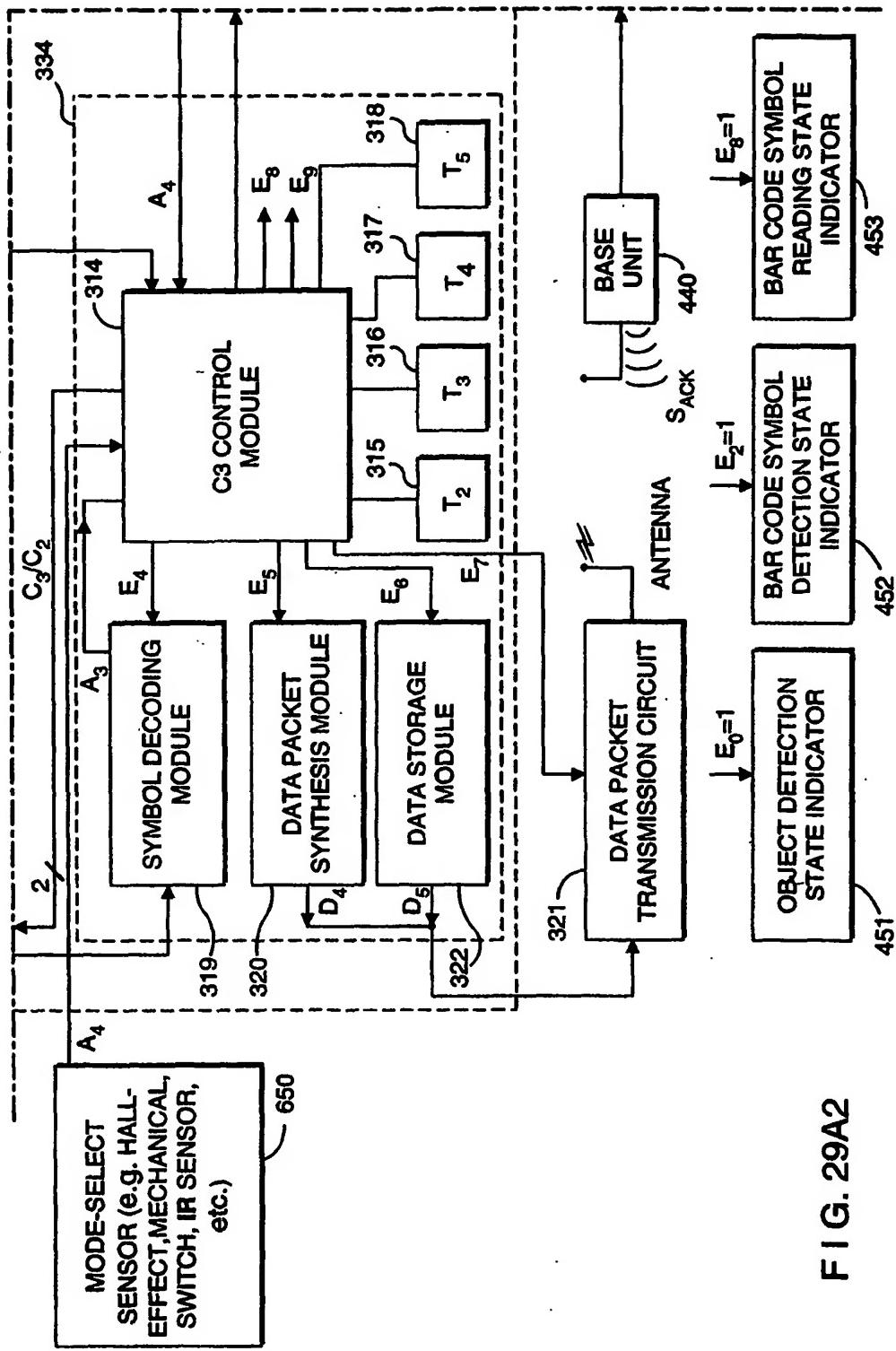
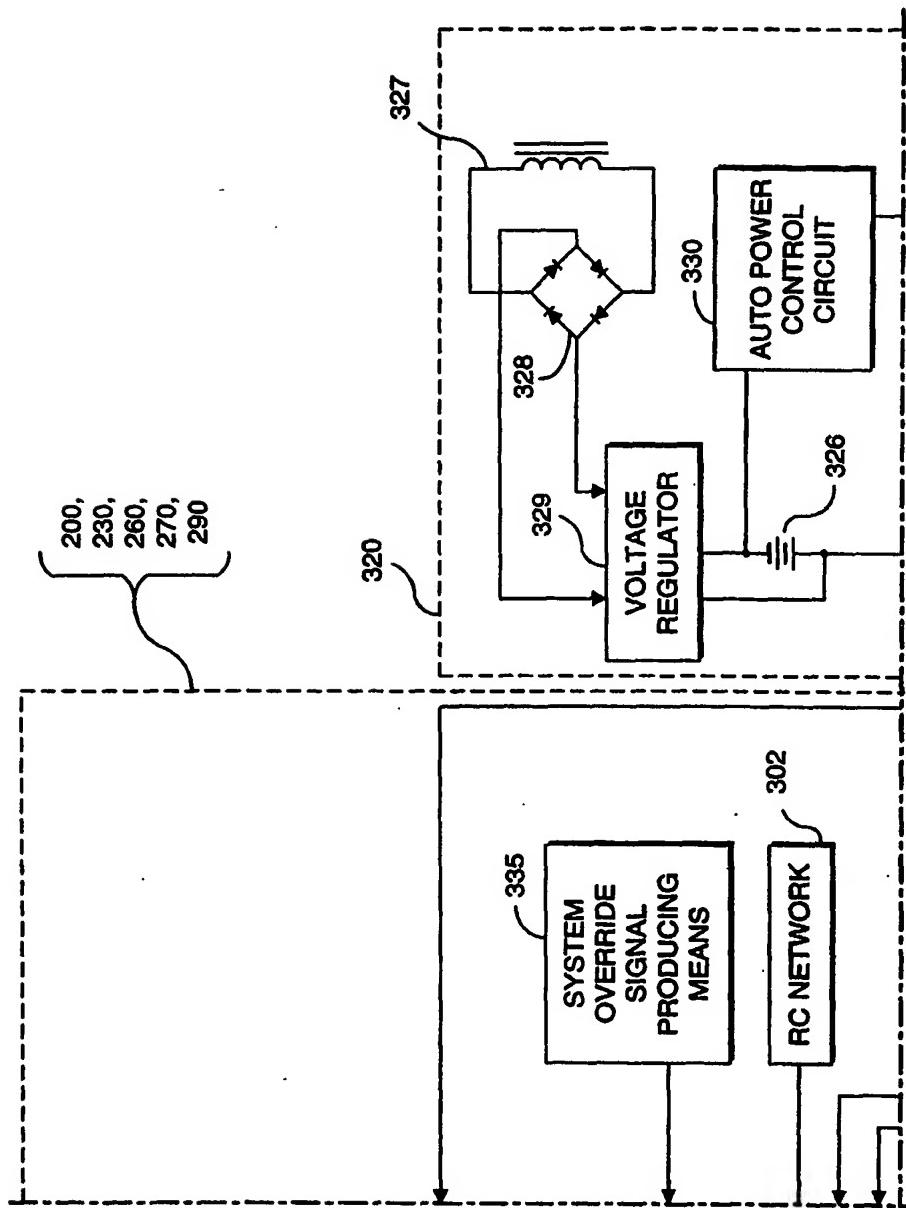


FIG. 29A2

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FIG. 29A3



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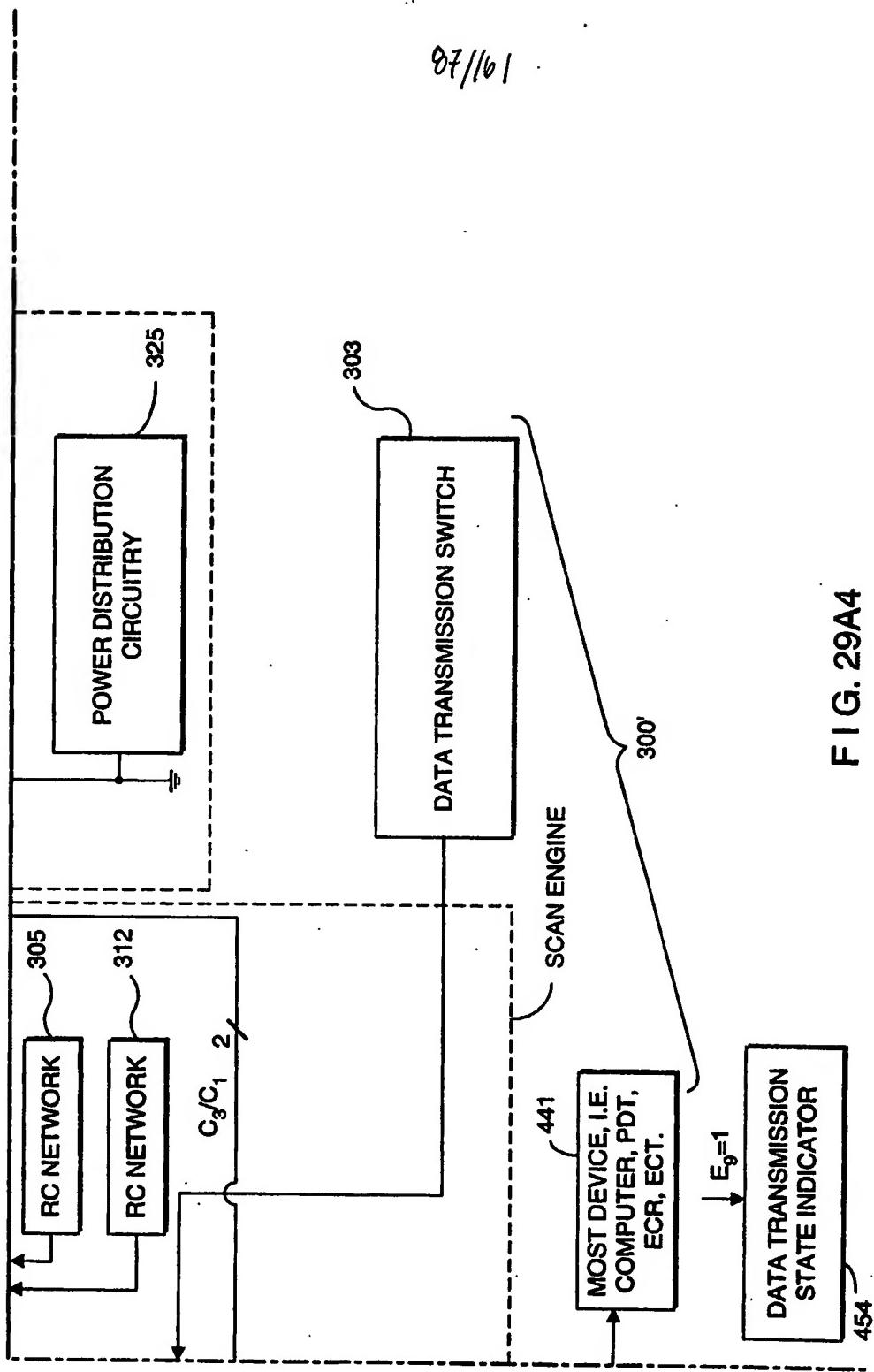


FIG. 29A4

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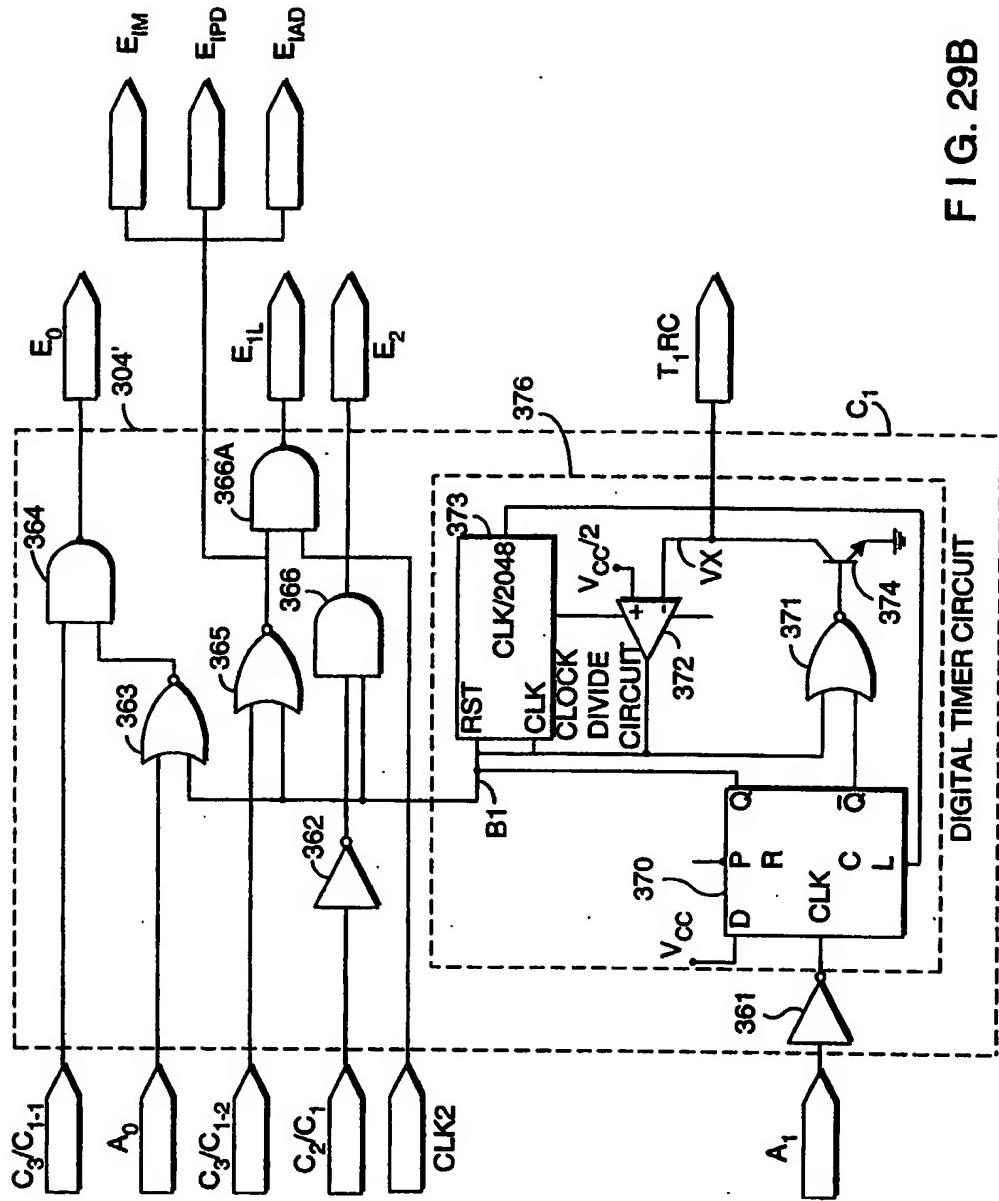


FIG. 29B

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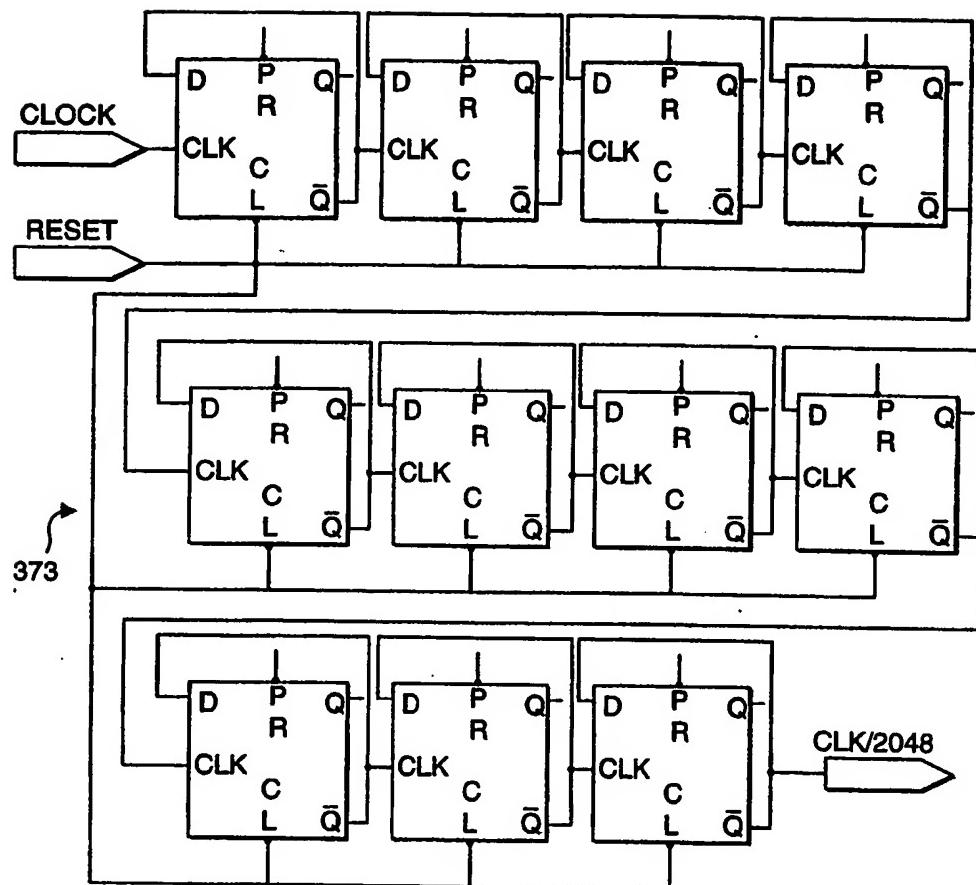


FIG. 29C

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$$\left\{ \begin{array}{l} E_0 = \overline{(B1 + A_0)(C_3/C_{1-1})} \\ E_{IM} = E_{IPD} = E_{IAD} = \overline{(C_3/C_{1-2}) + B1} \\ E_L = \overline{[(C_3/C_{1-1}) + B1][B2]} \\ E_2 = \overline{(C_2/C_1)}(B1) \end{array} \right.$$

FIG. 29D

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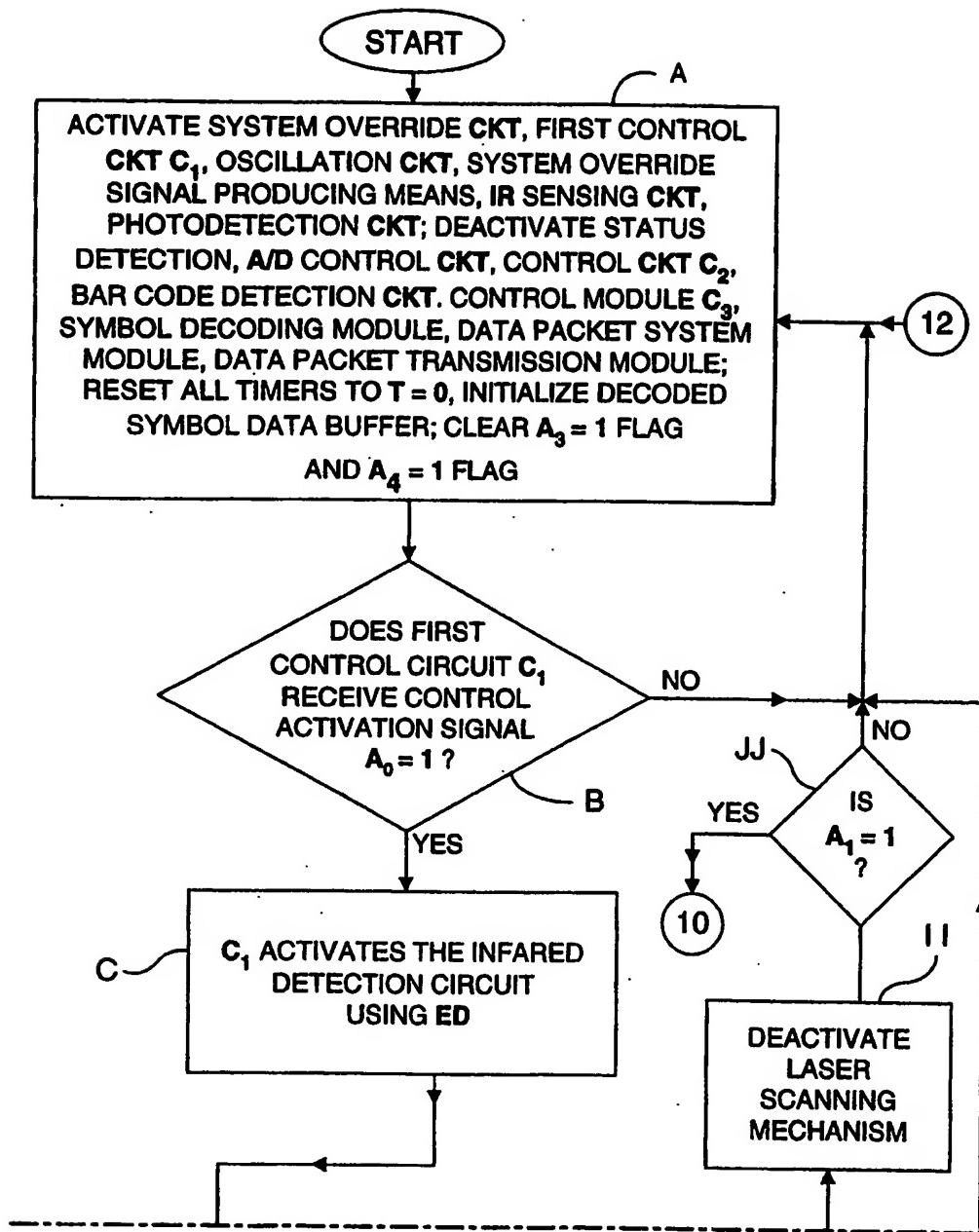


FIG. 30A1

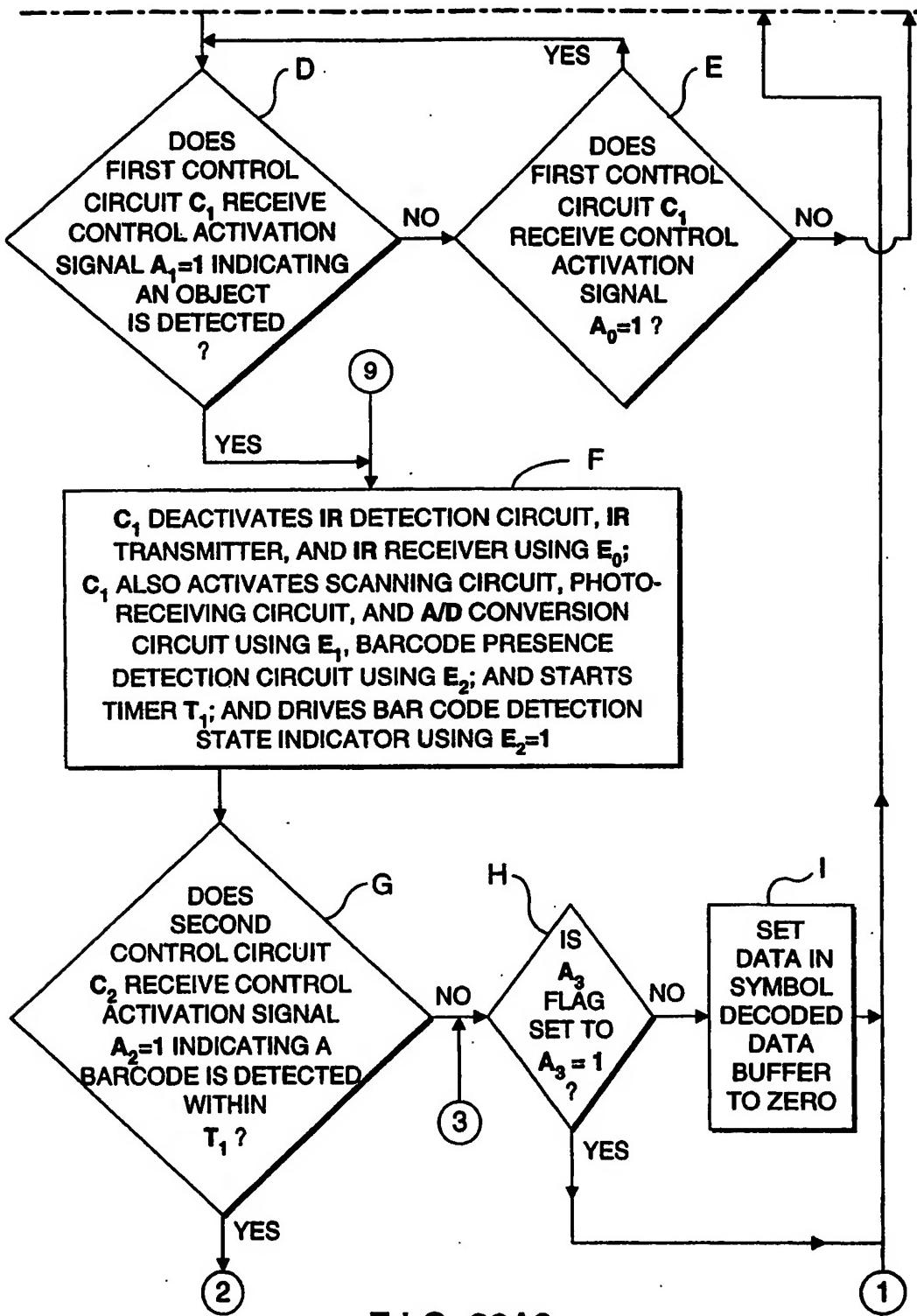


FIG. 30A2

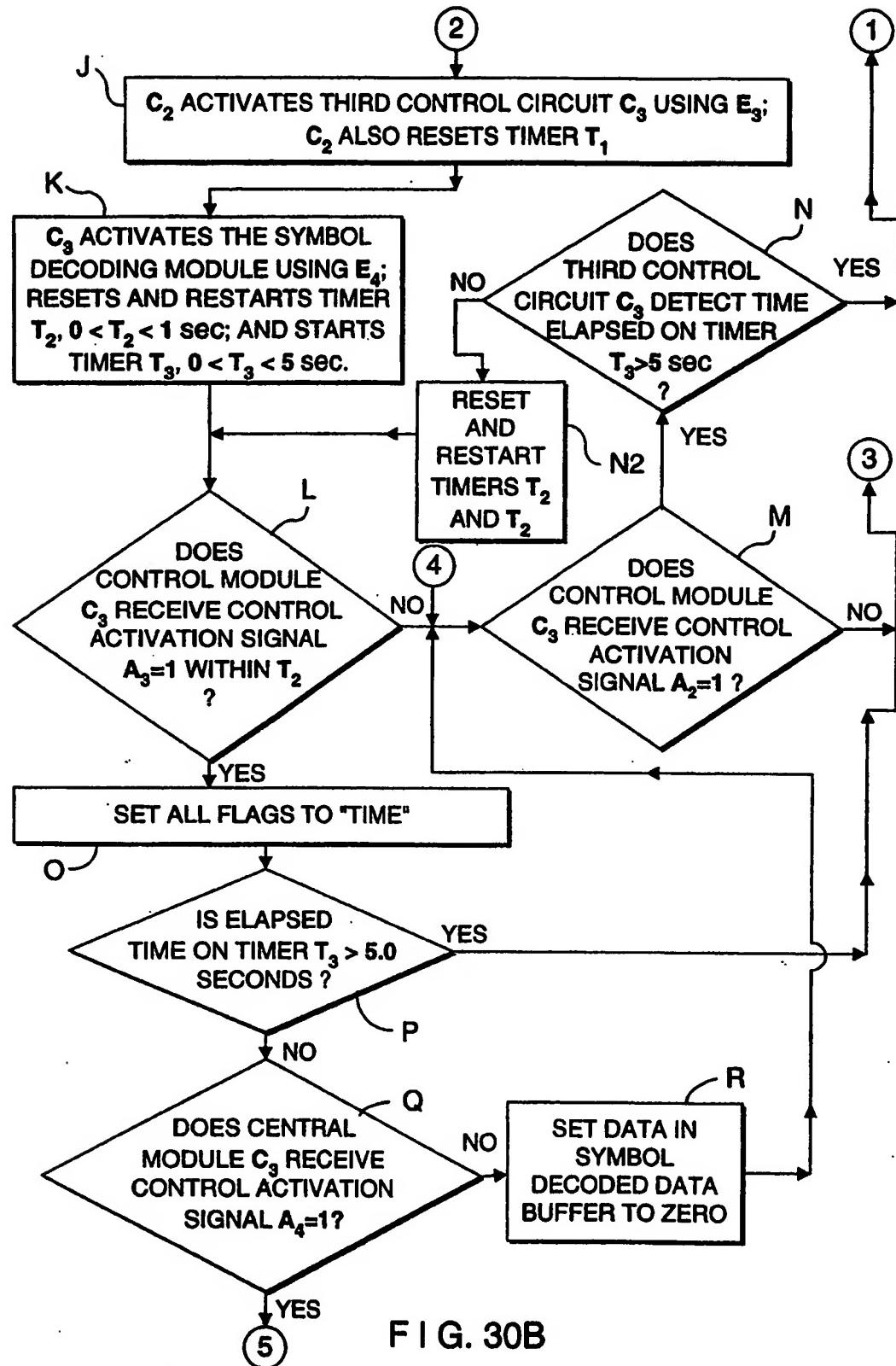


FIG. 30B

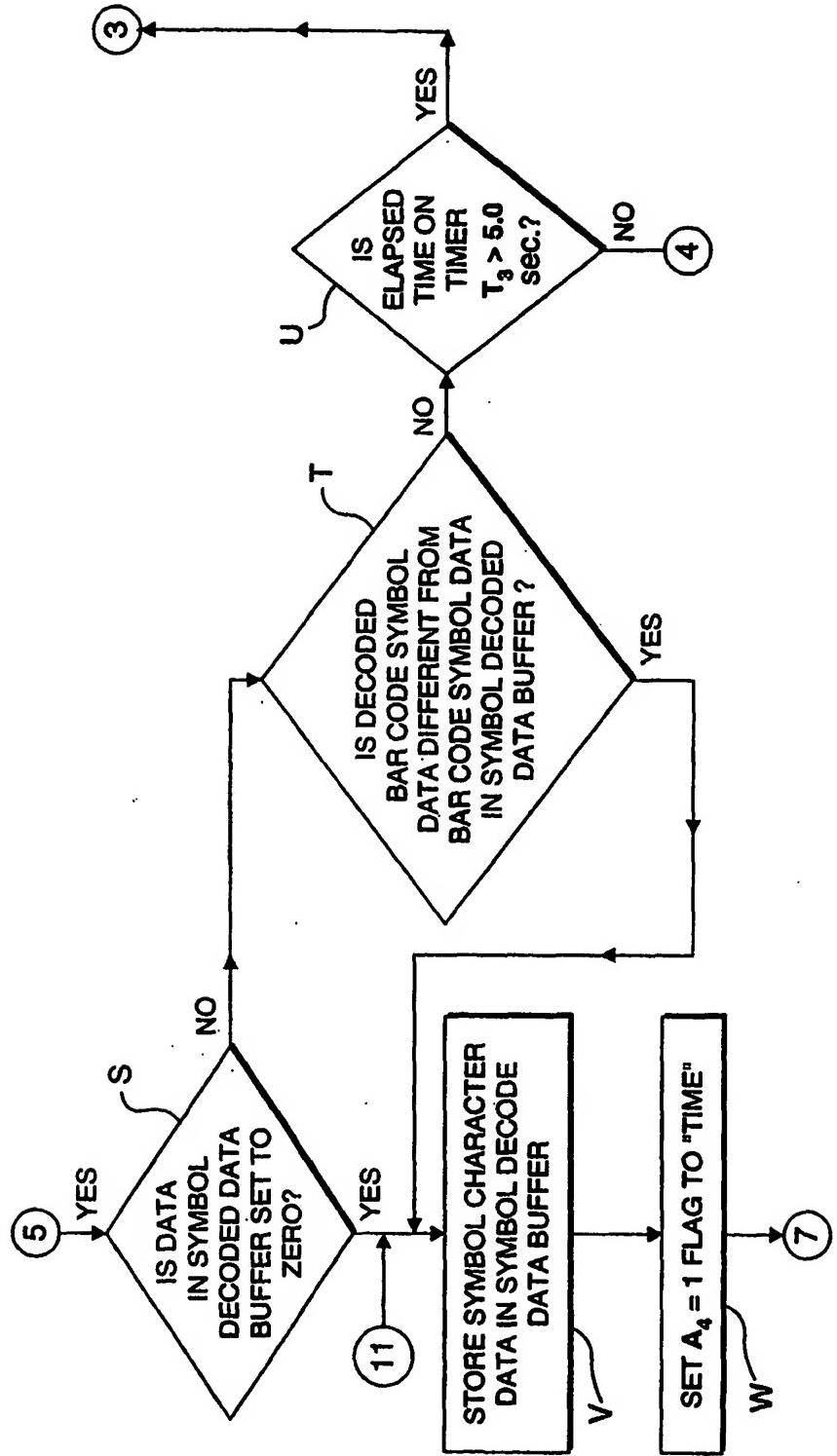


FIG. 30C

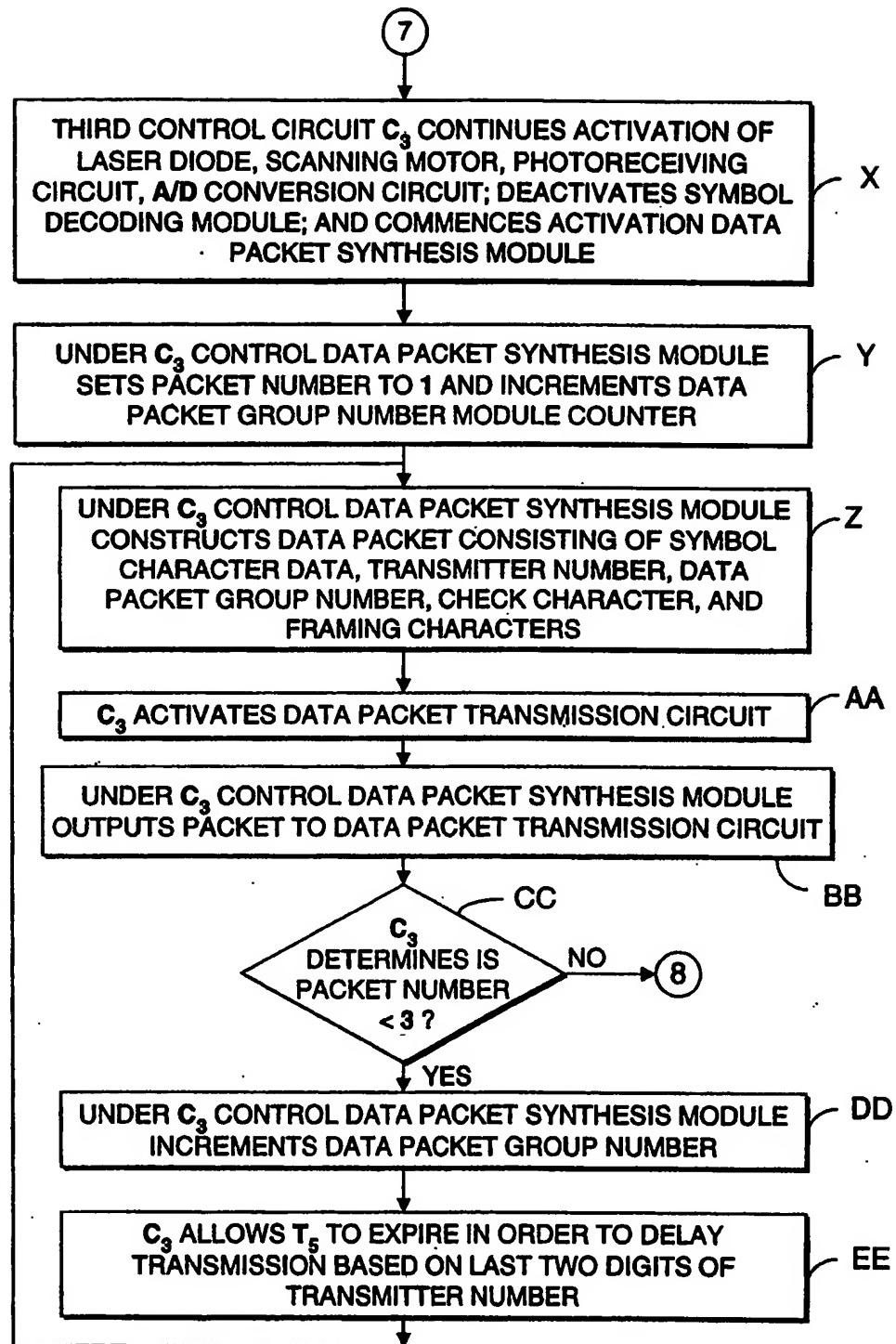


FIG. 30D

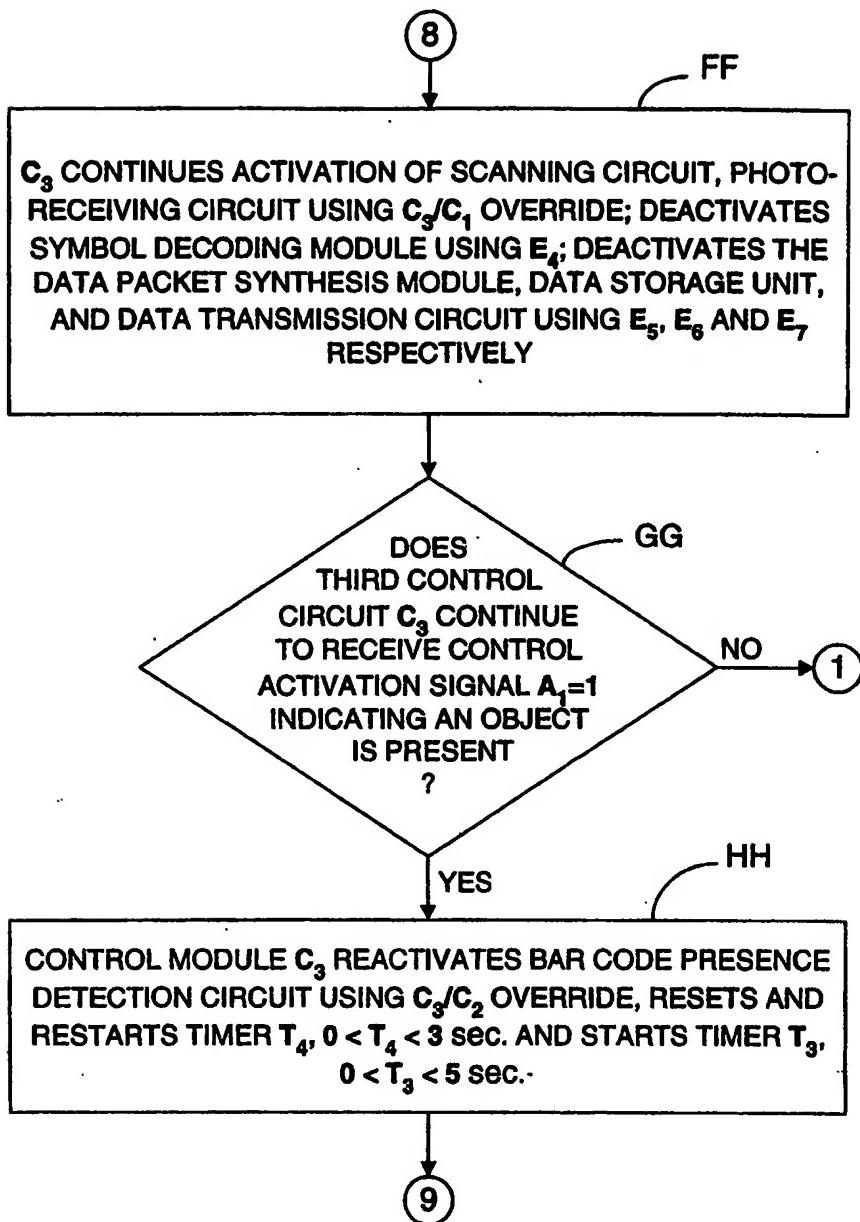


FIG. 30E

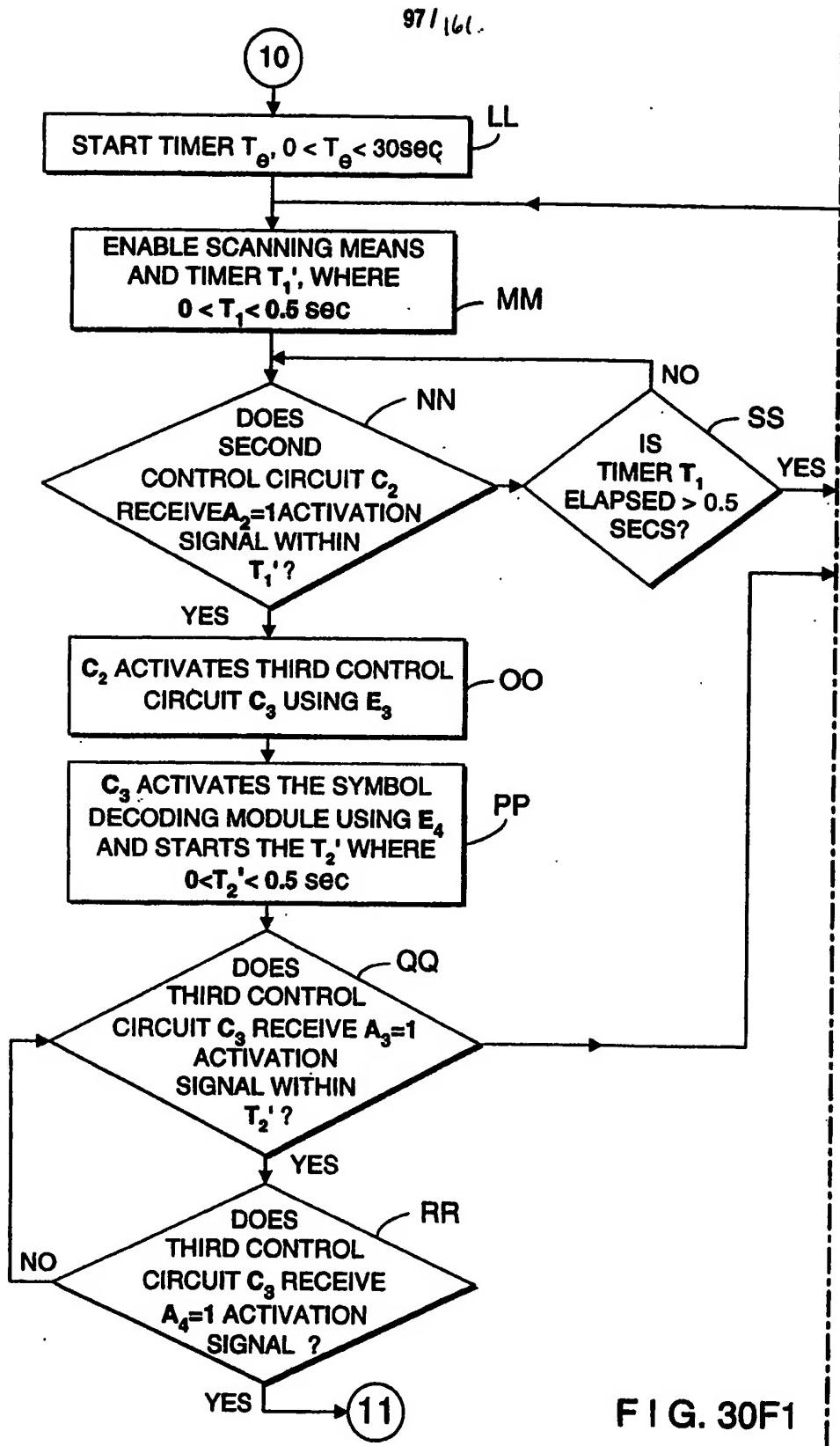
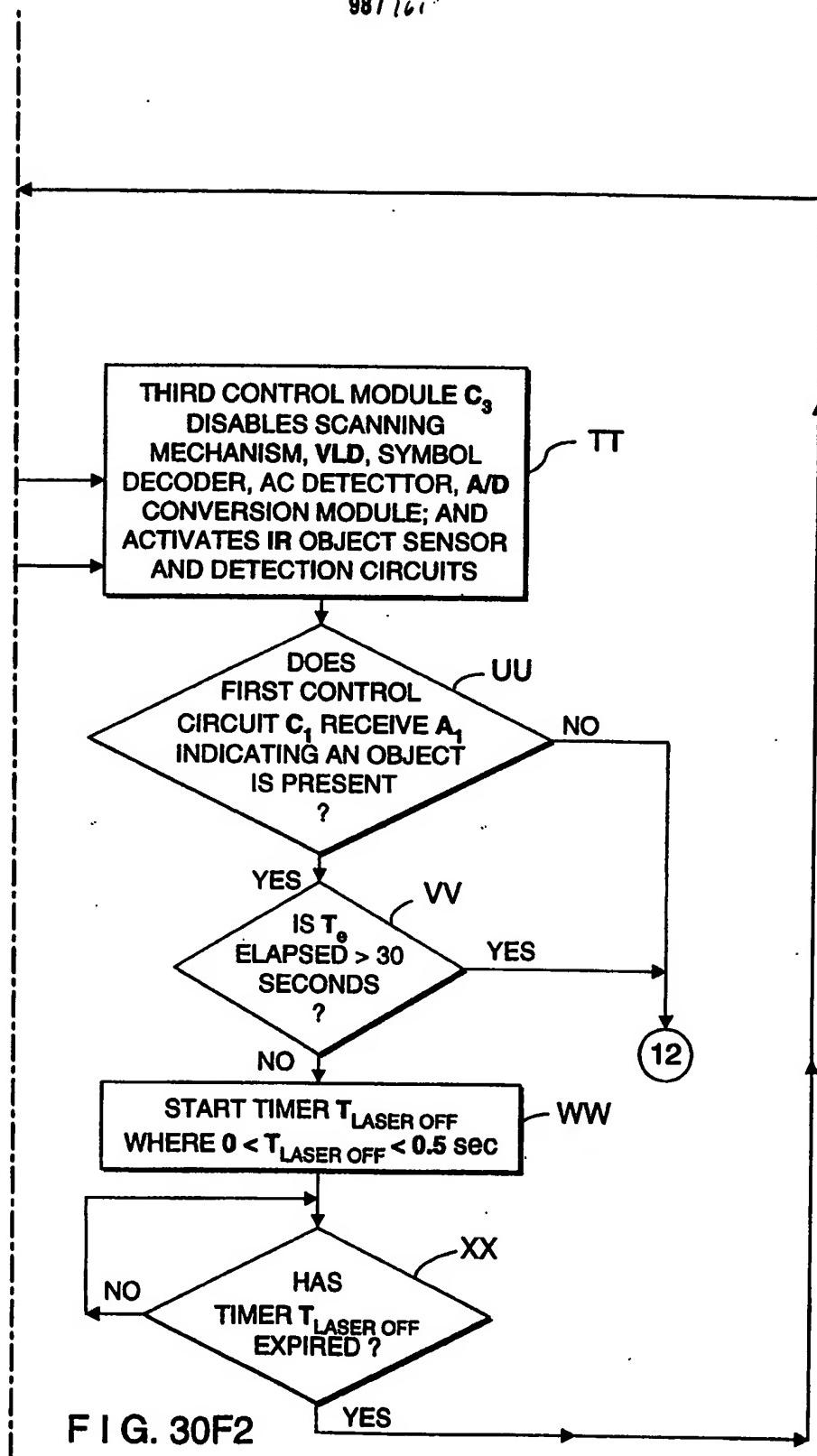


FIG. 30F1



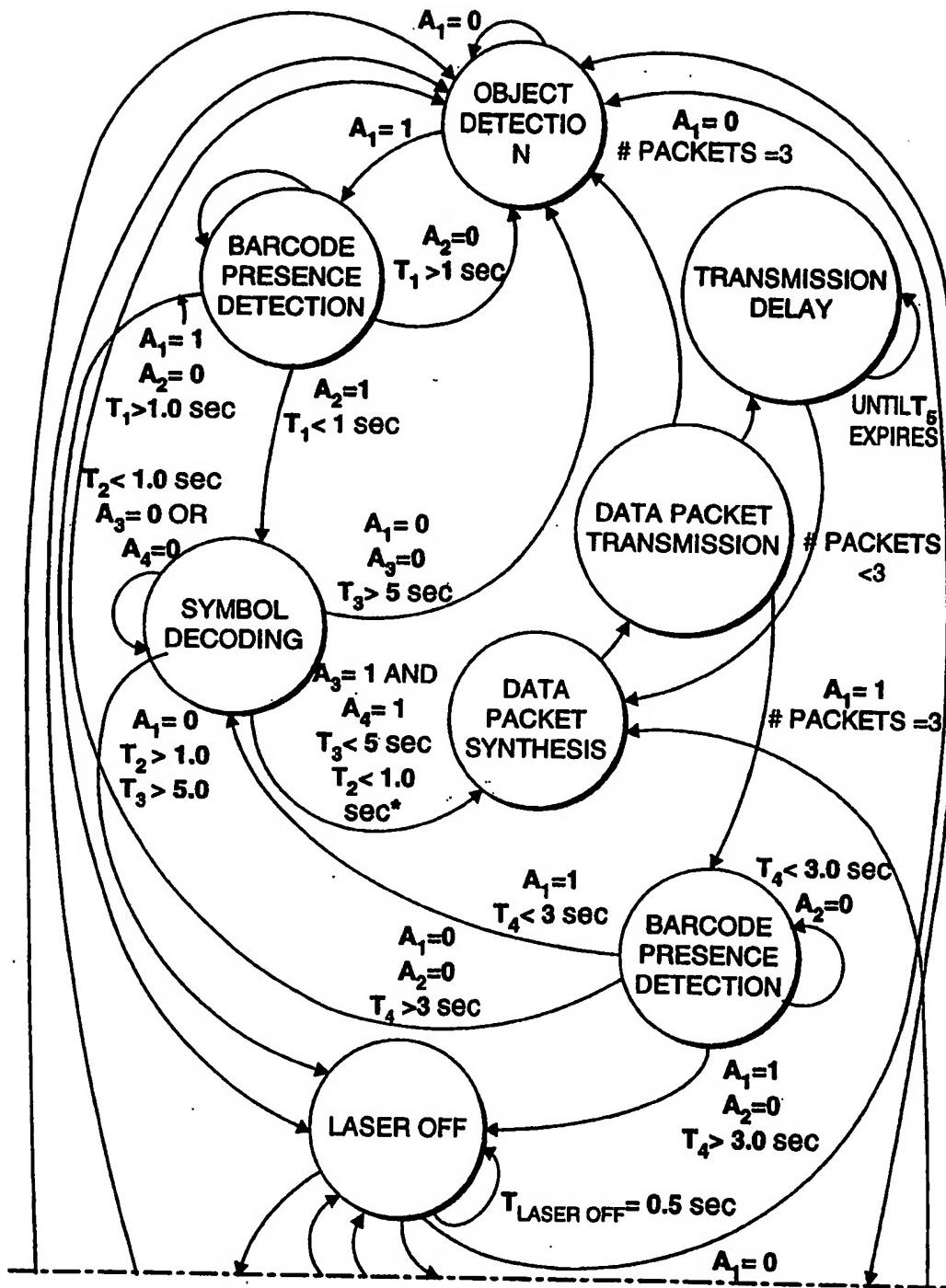


FIG. 31A

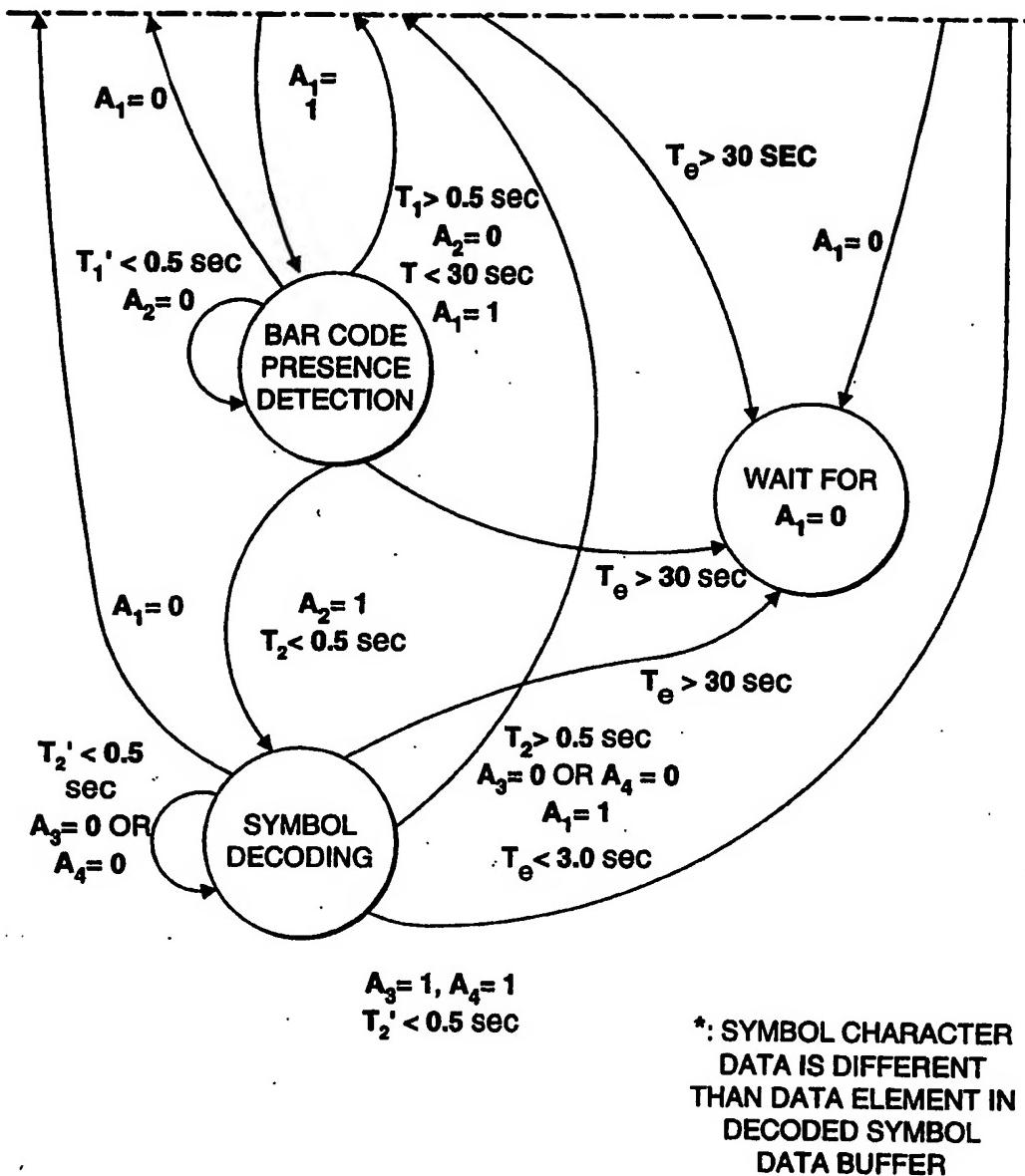


FIG. 31B

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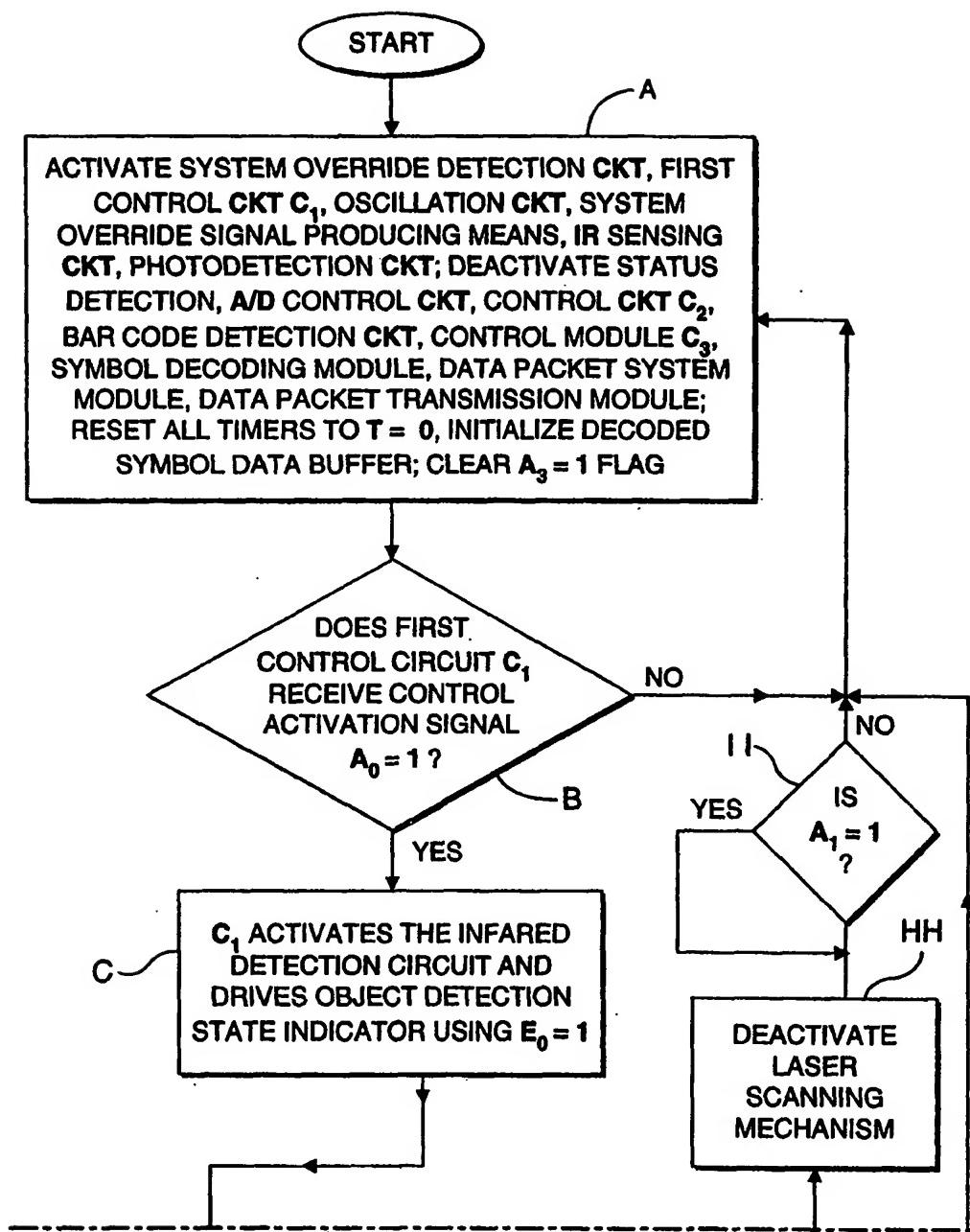


FIG. 32A1

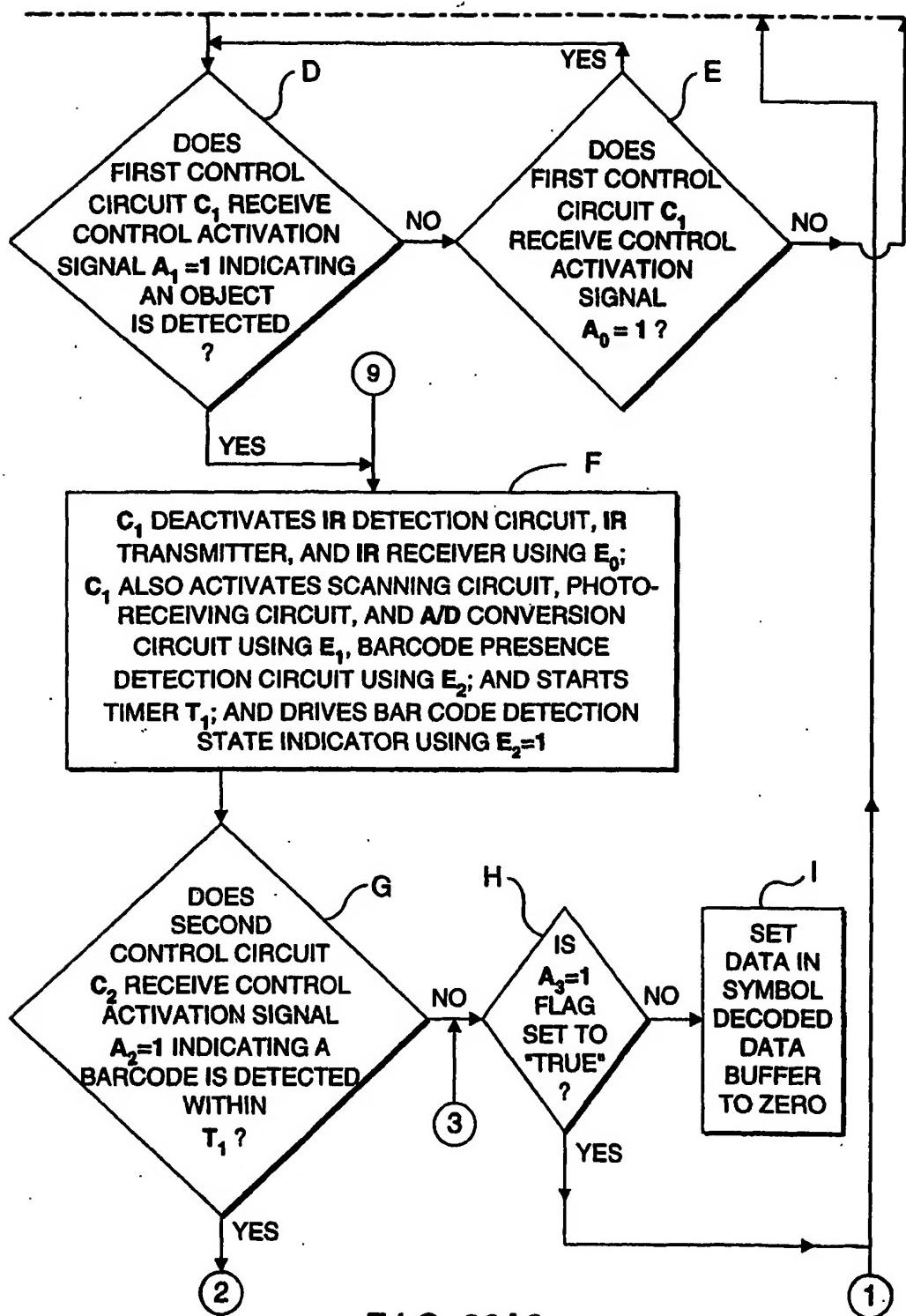


FIG. 32A2

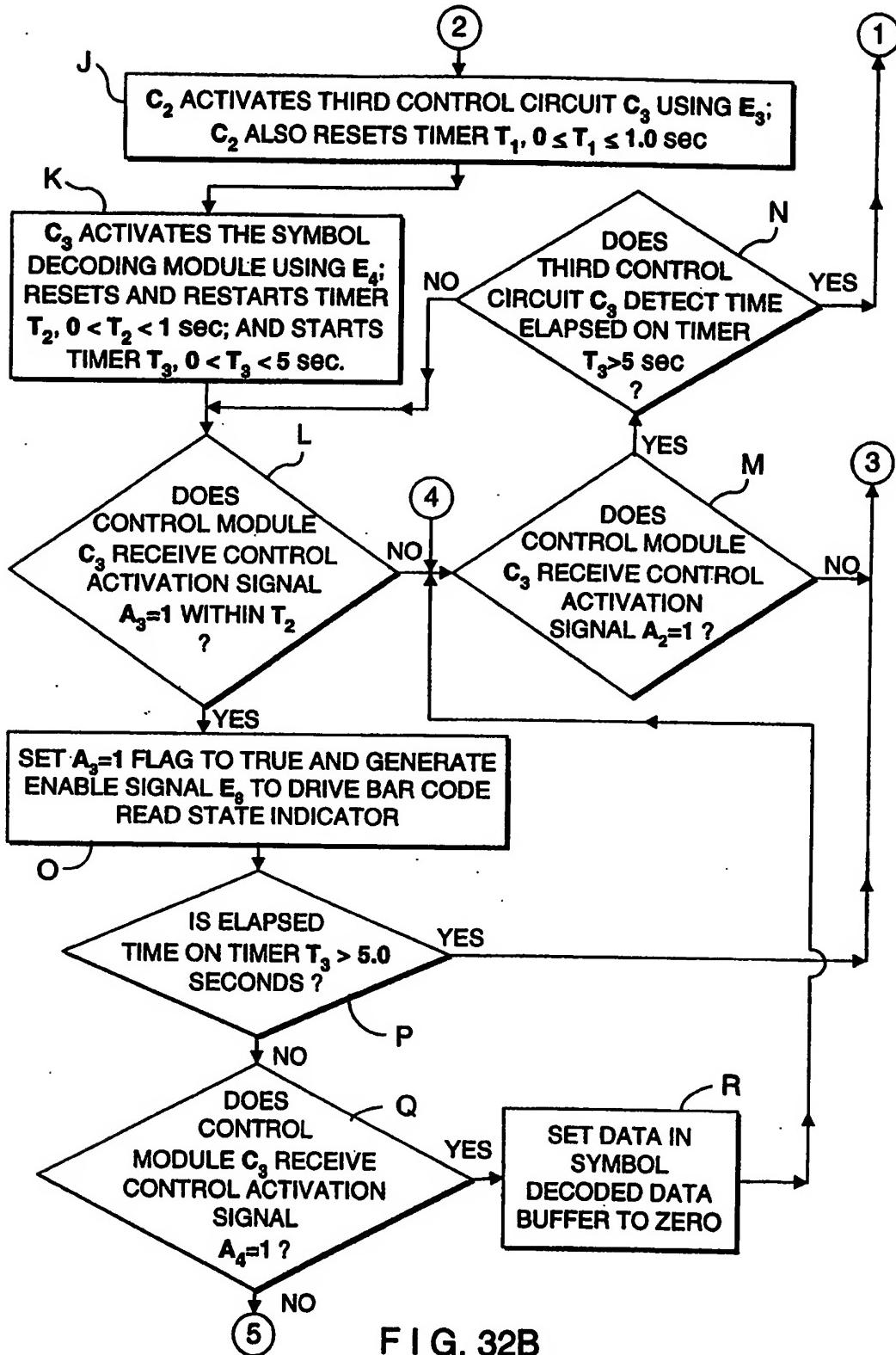
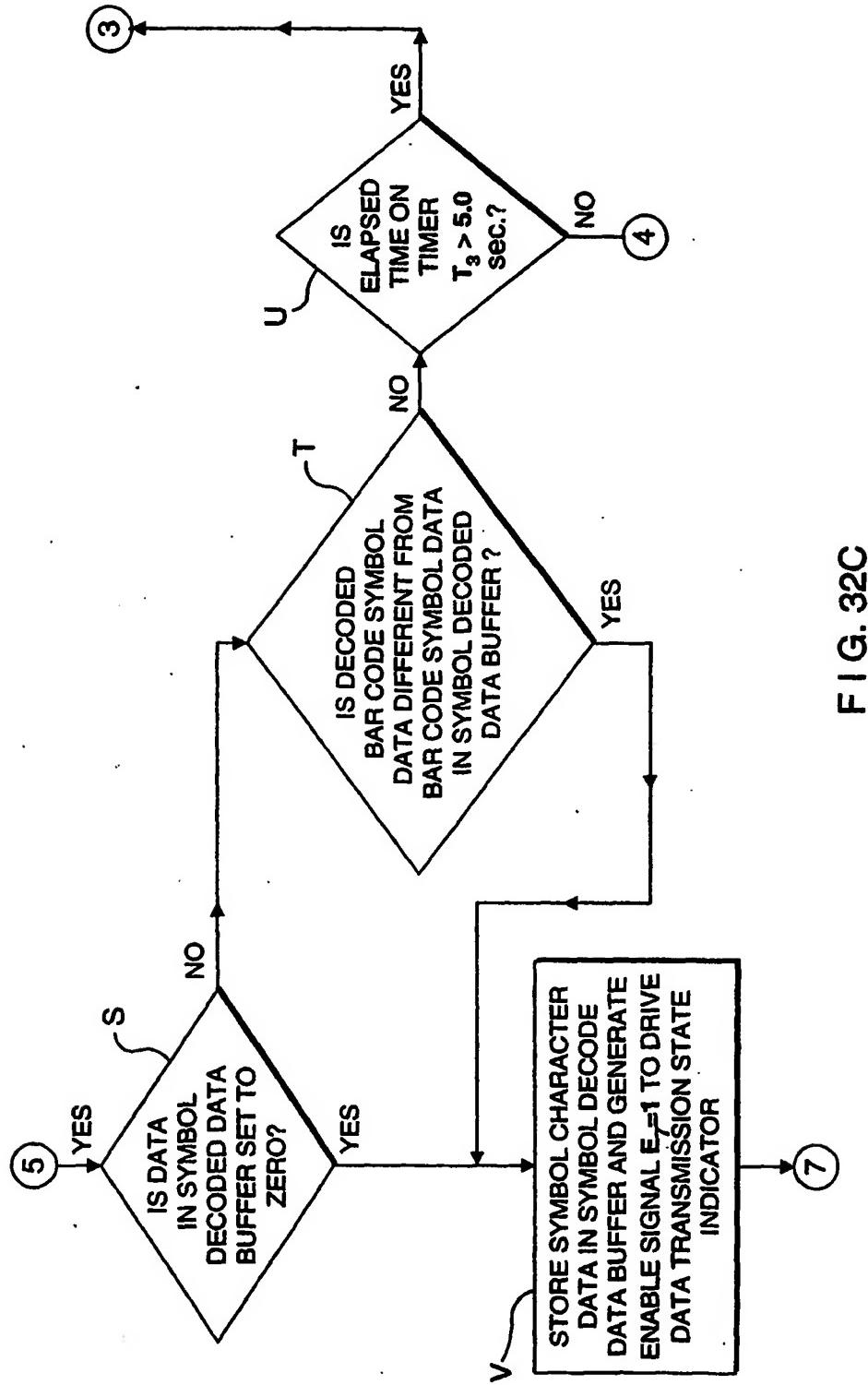


FIG. 32B



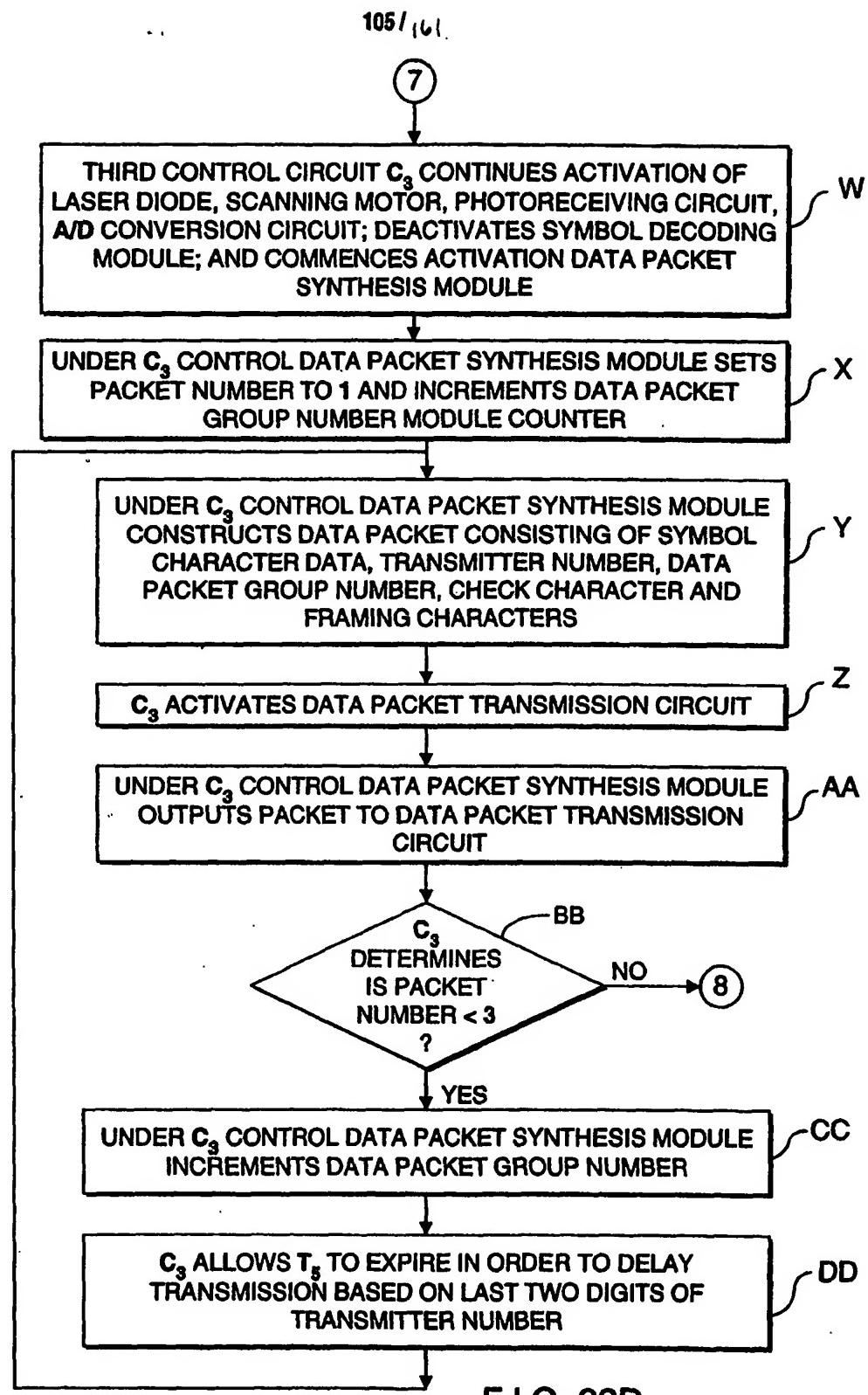


FIG. 32D

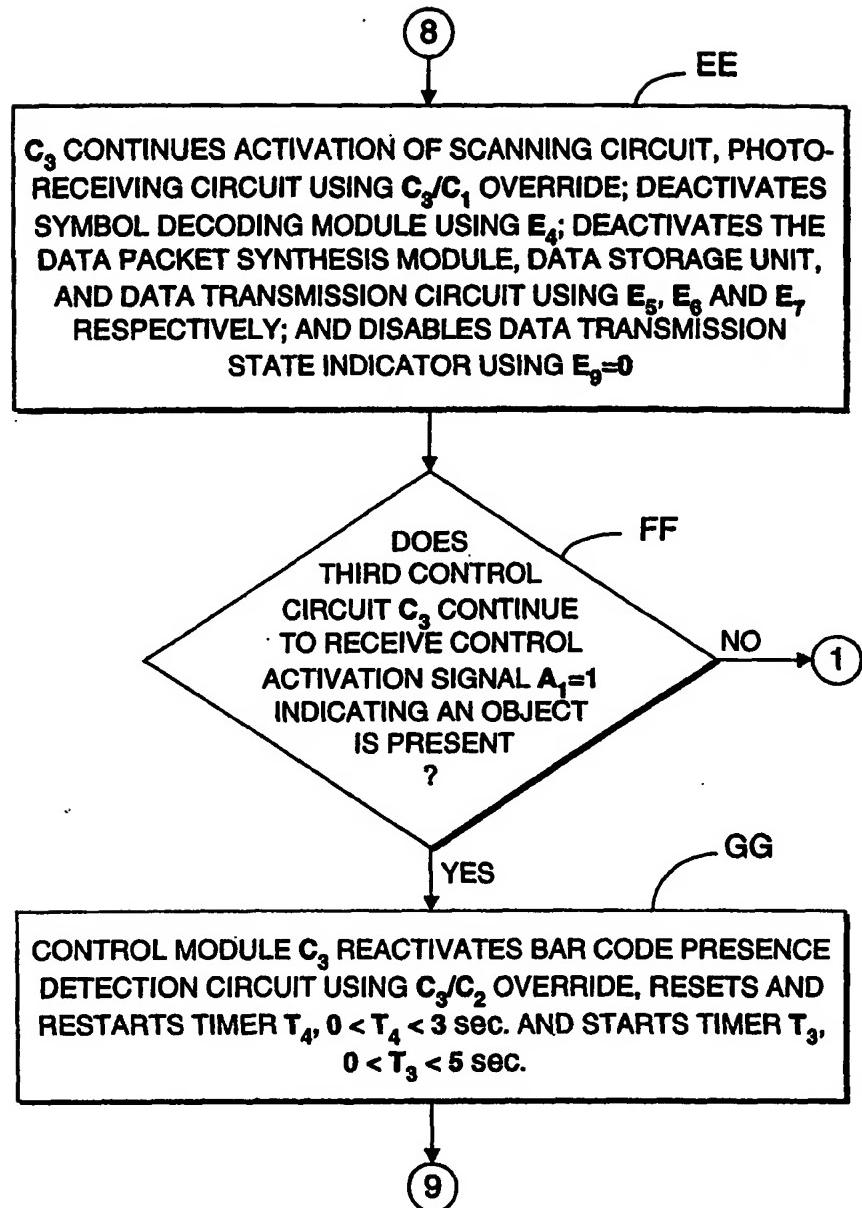


FIG. 32E

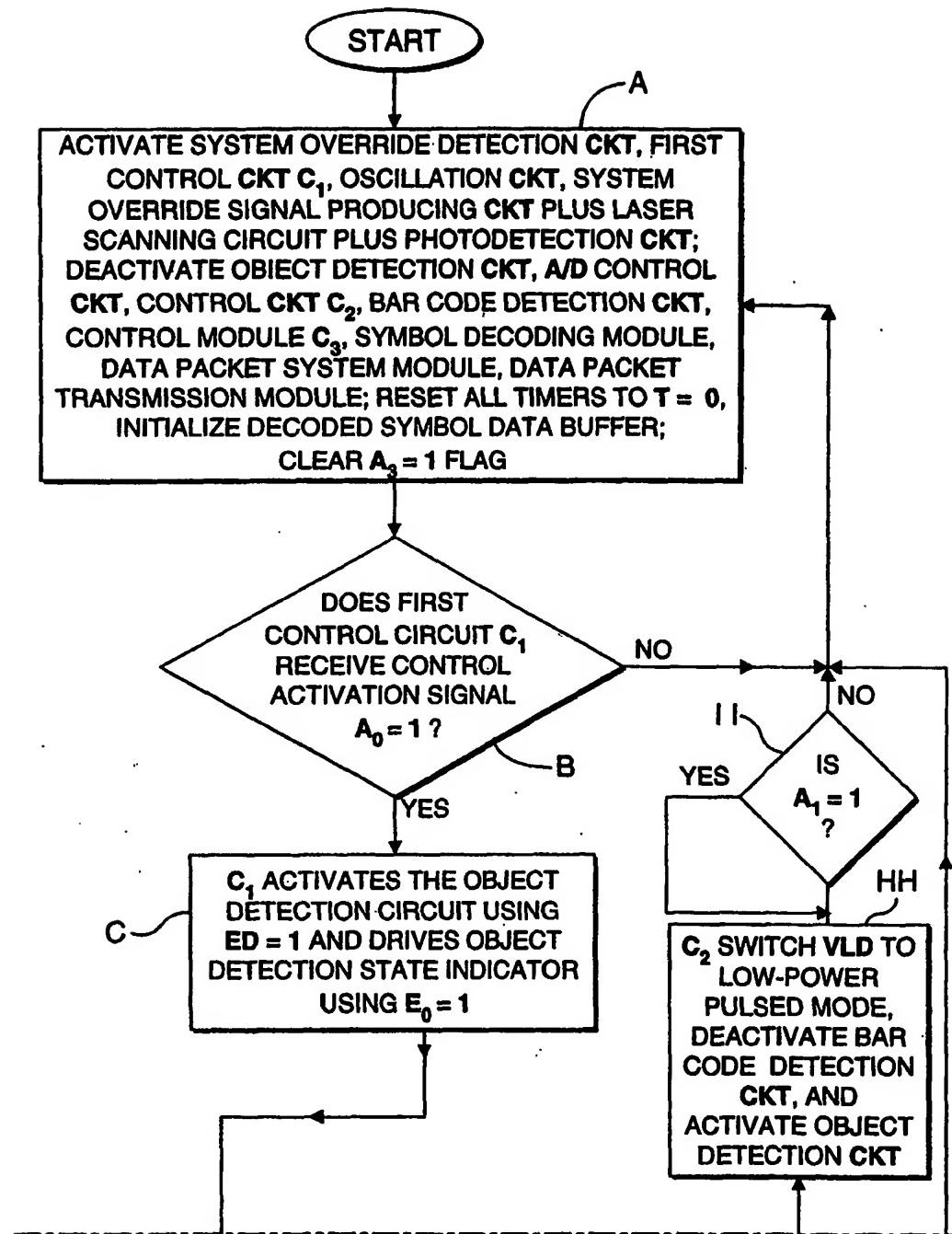


FIG. 33A1

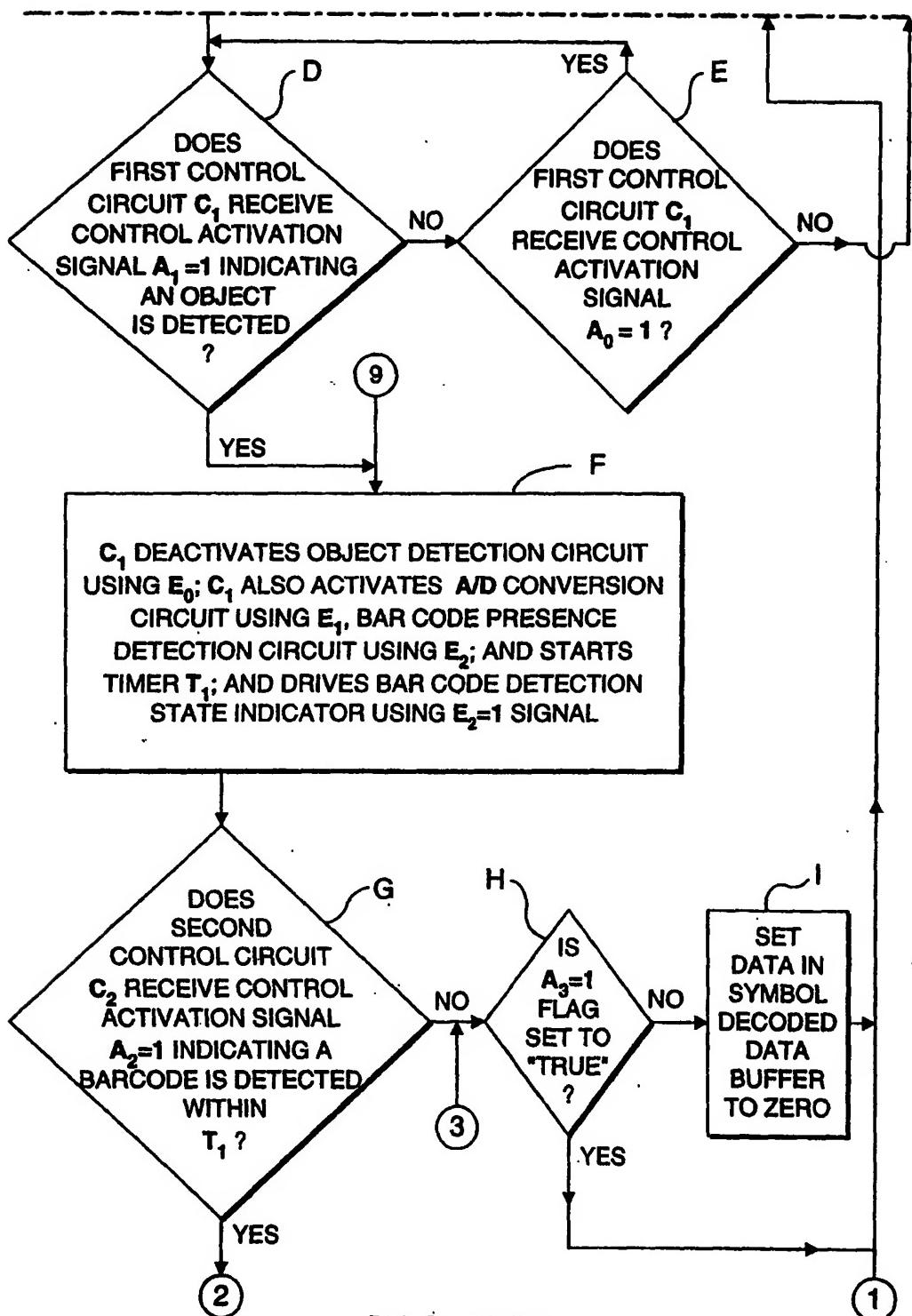


FIG. 33A2

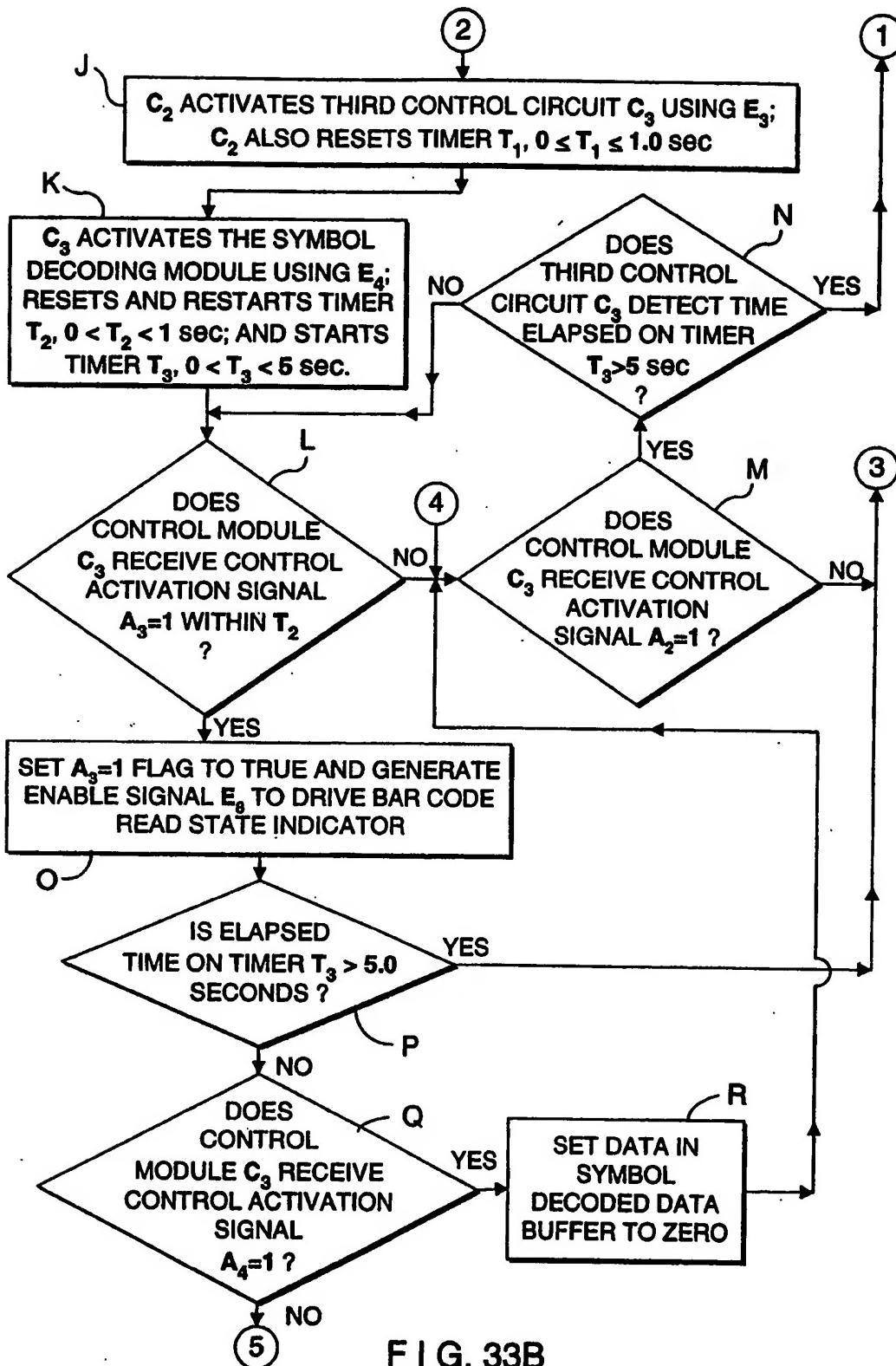


FIG. 33B

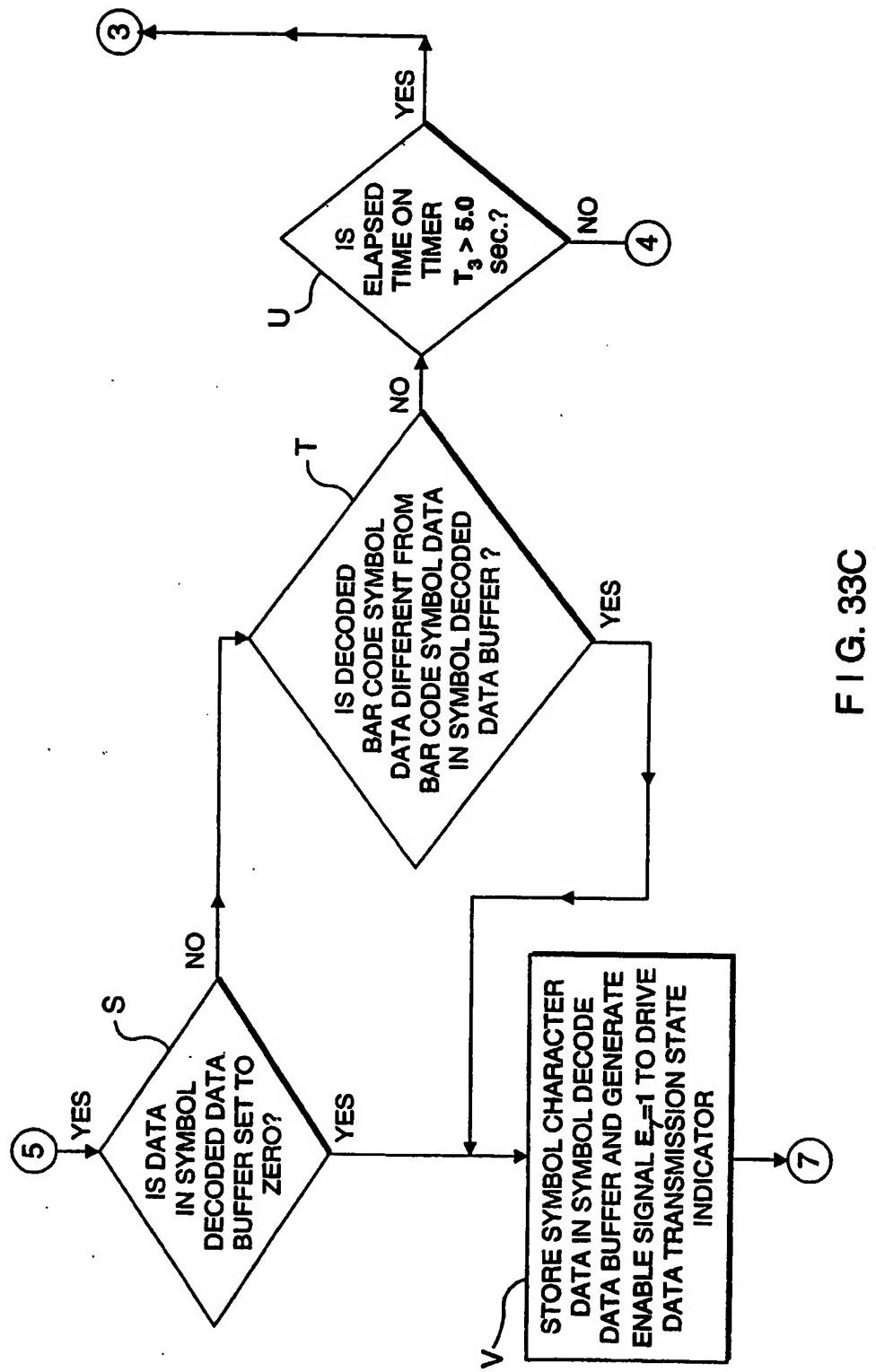
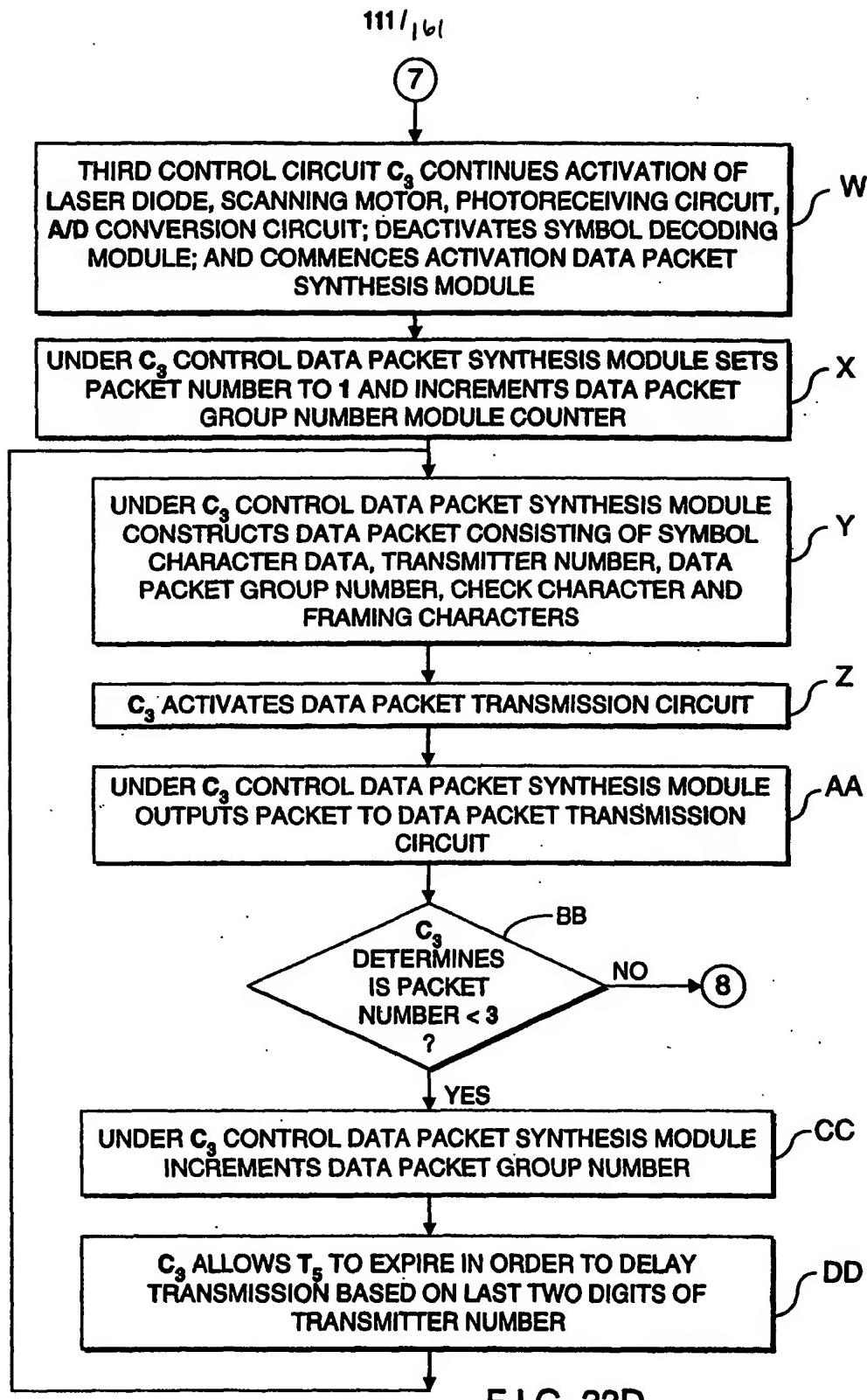


FIG. 33C



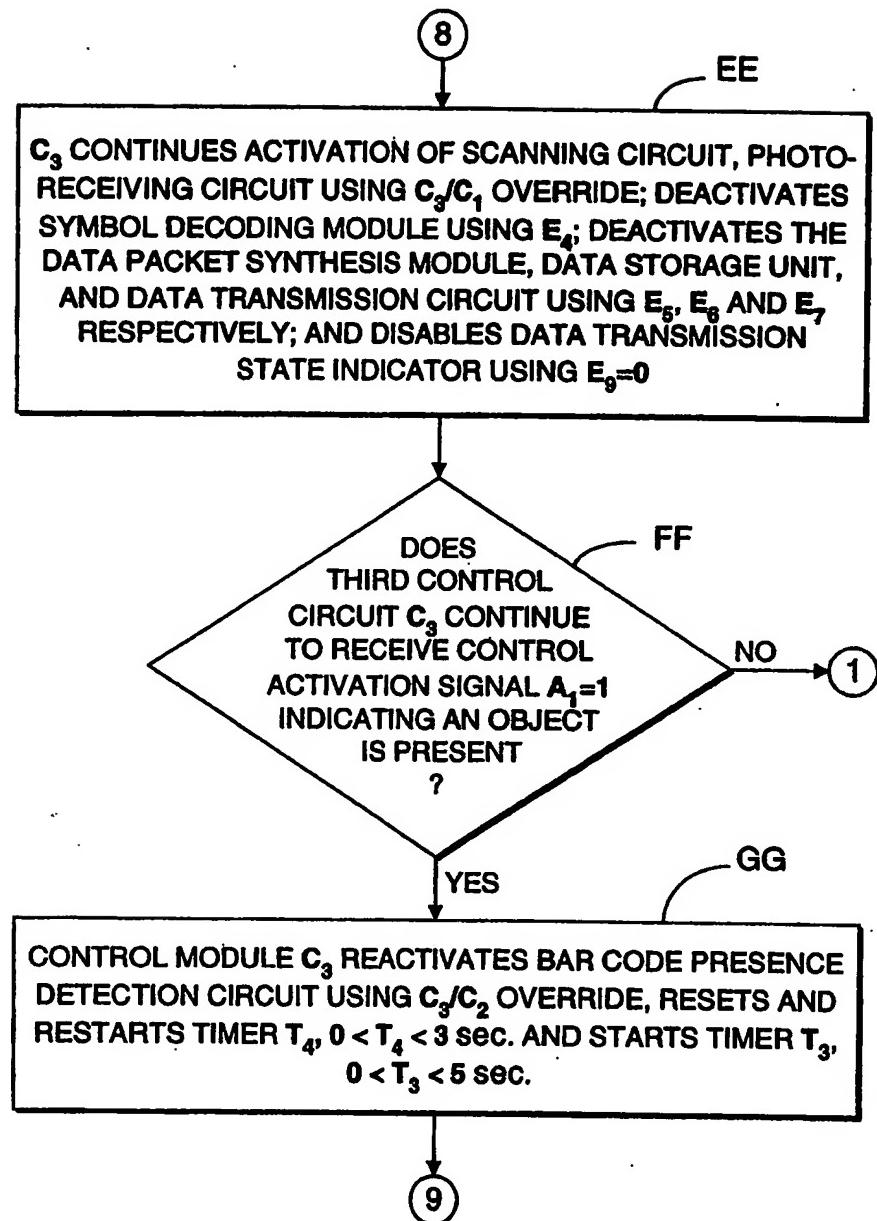


FIG. 33E

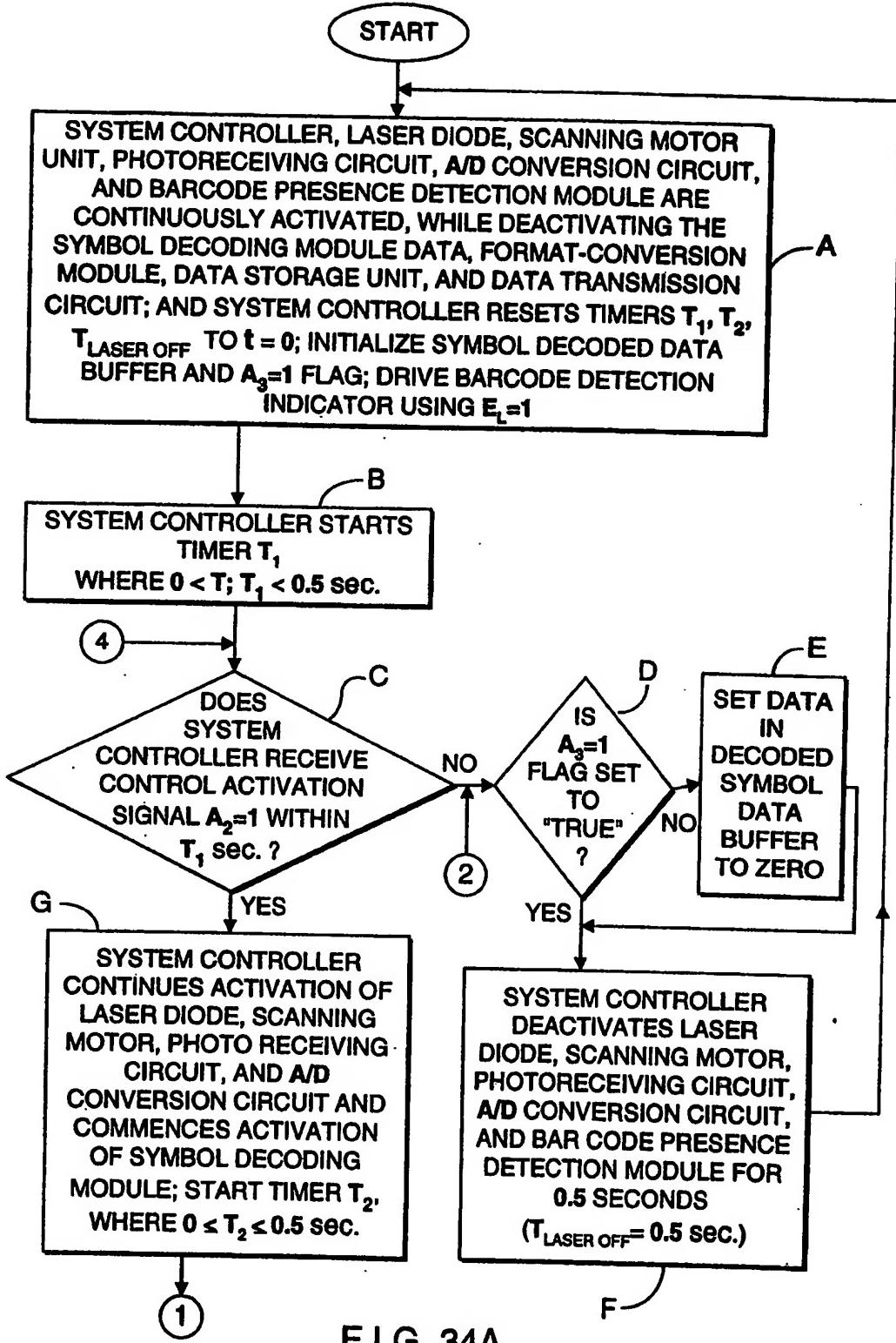


FIG. 34A

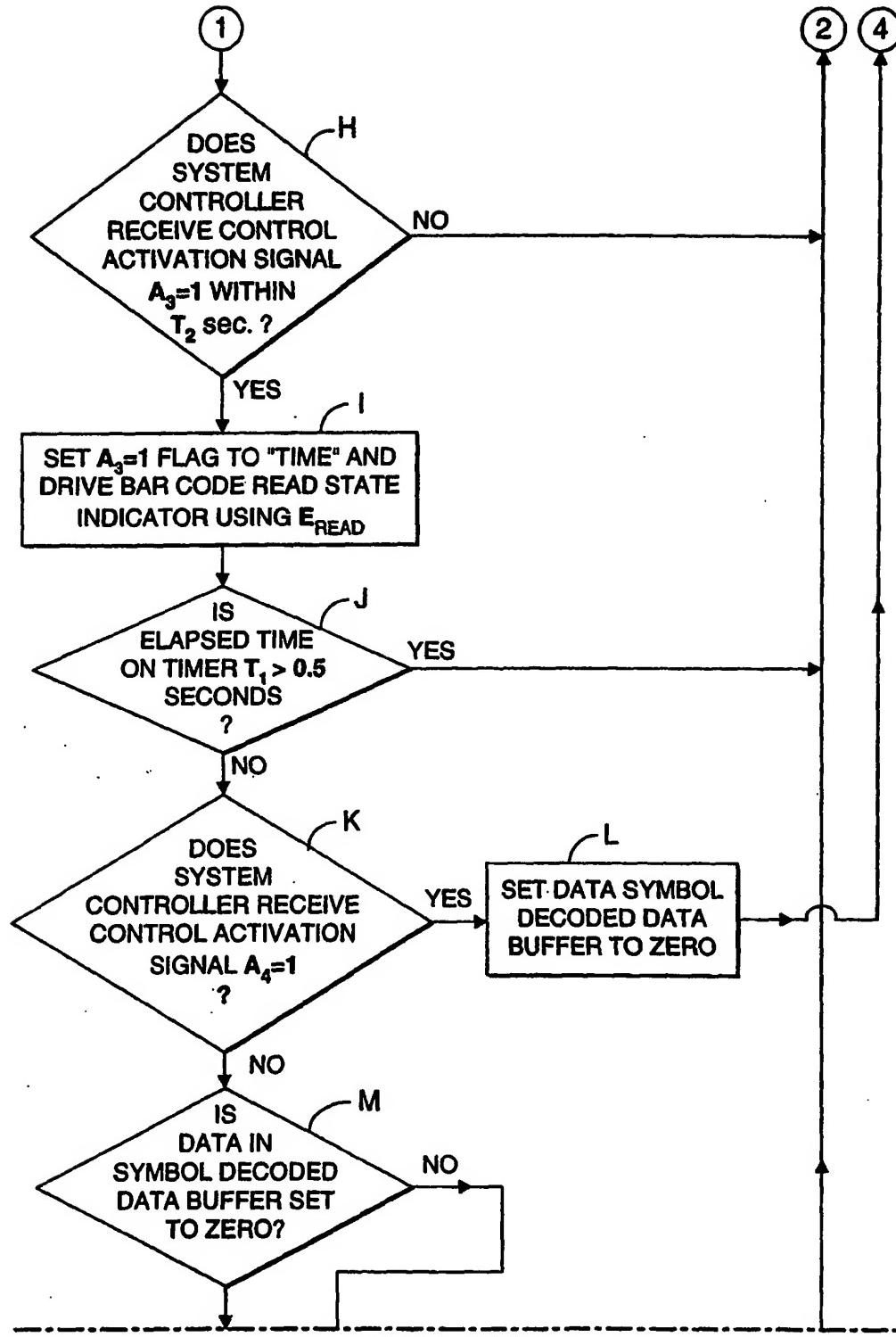


FIG. 34B1

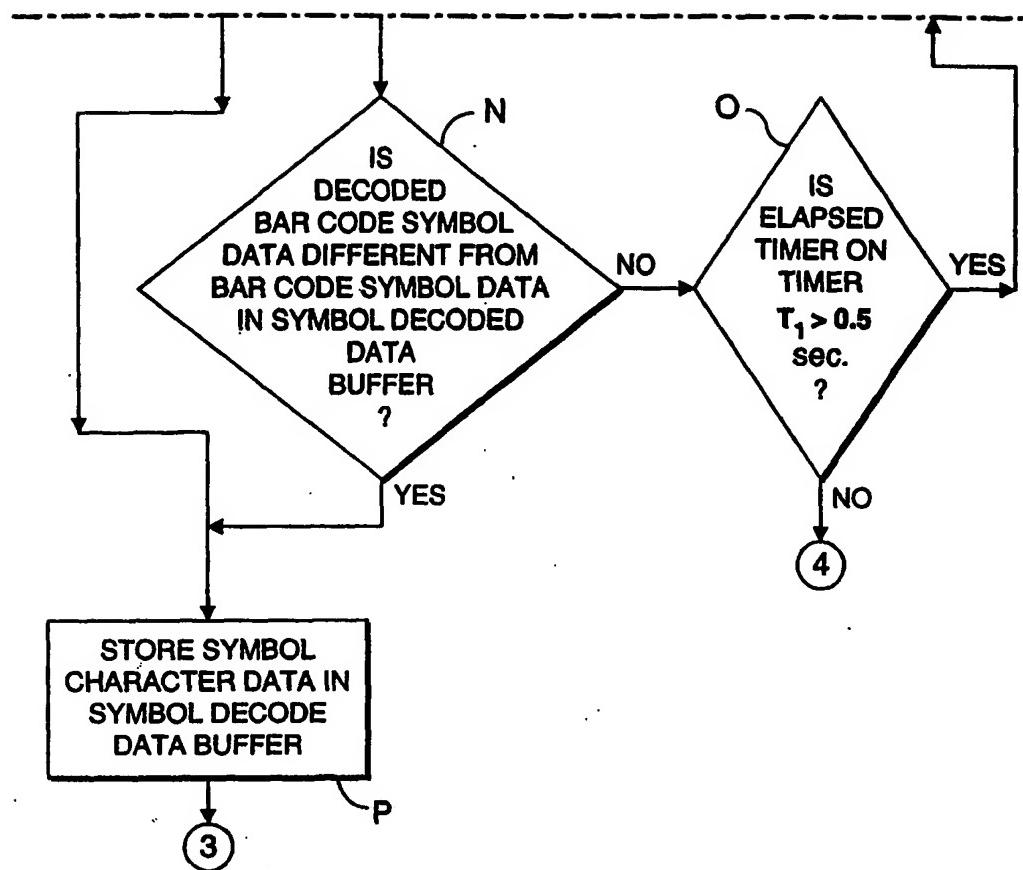


FIG. 34B2

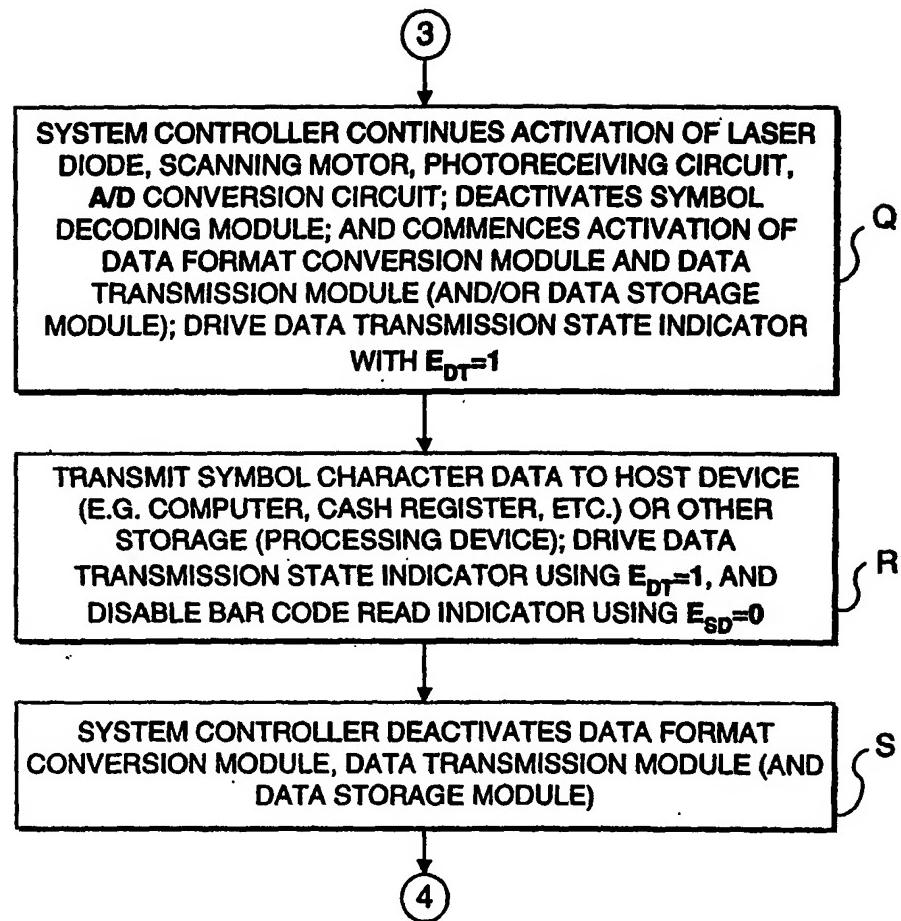


FIG. 34C

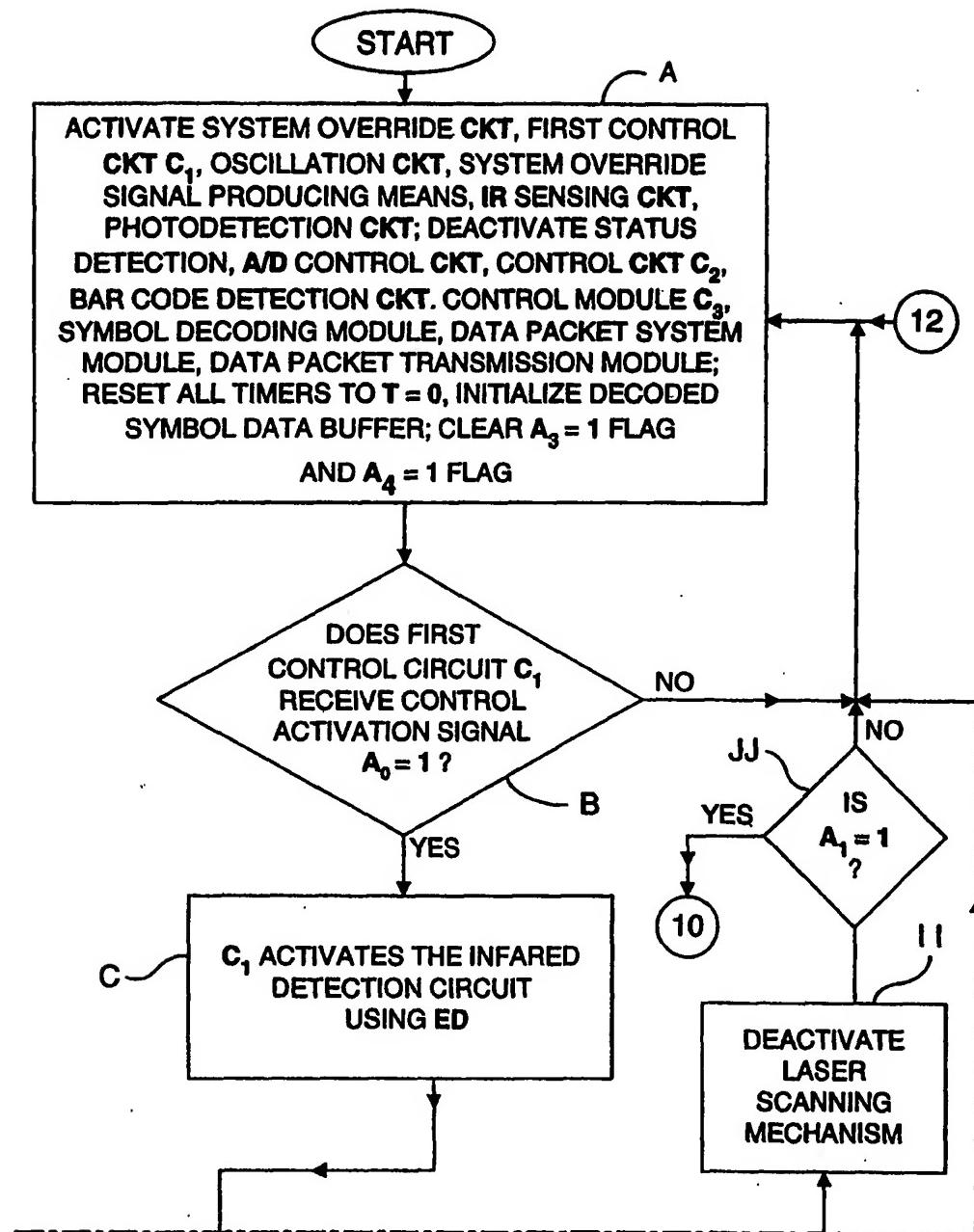


FIG. 35A1

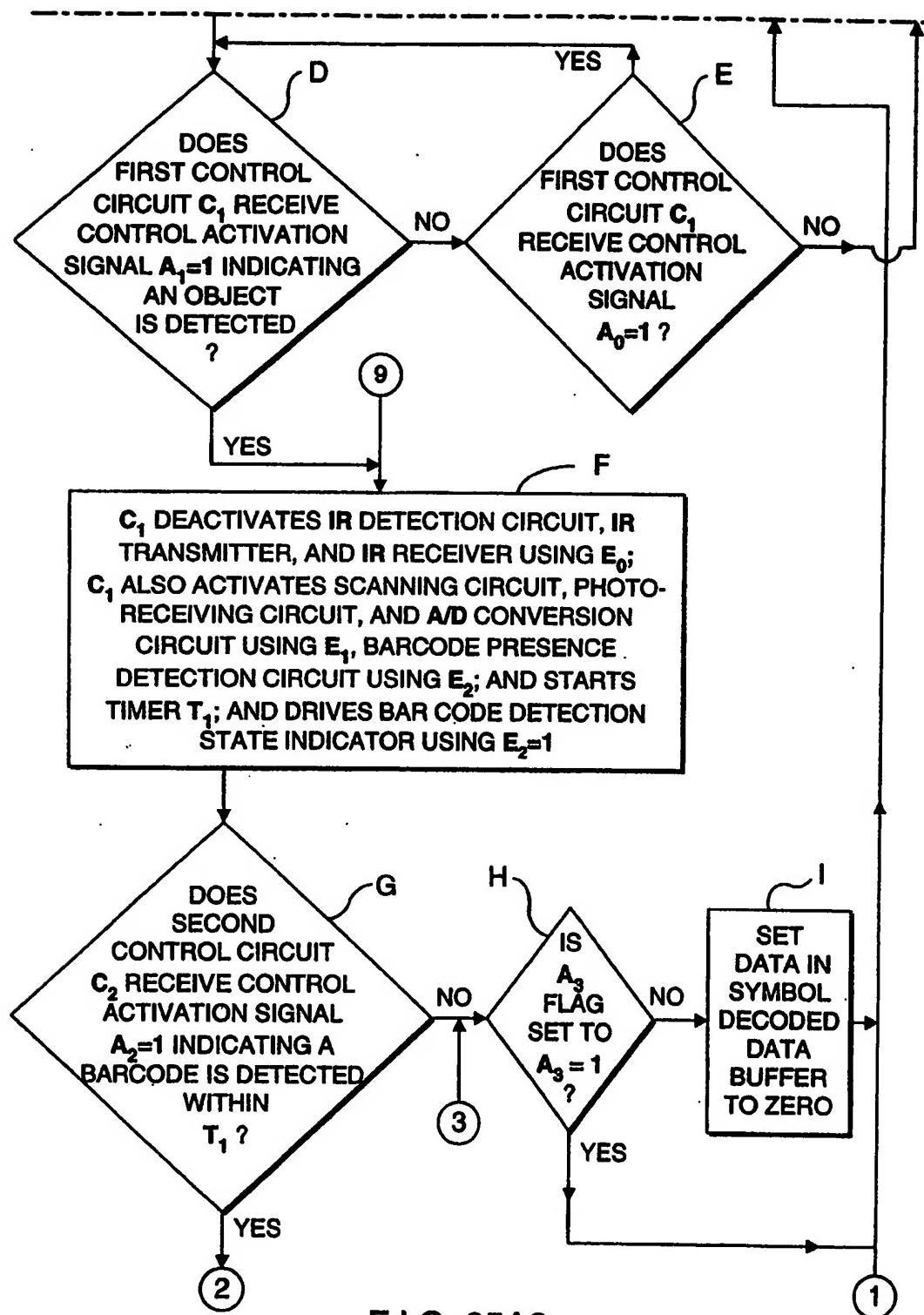


FIG. 35A2

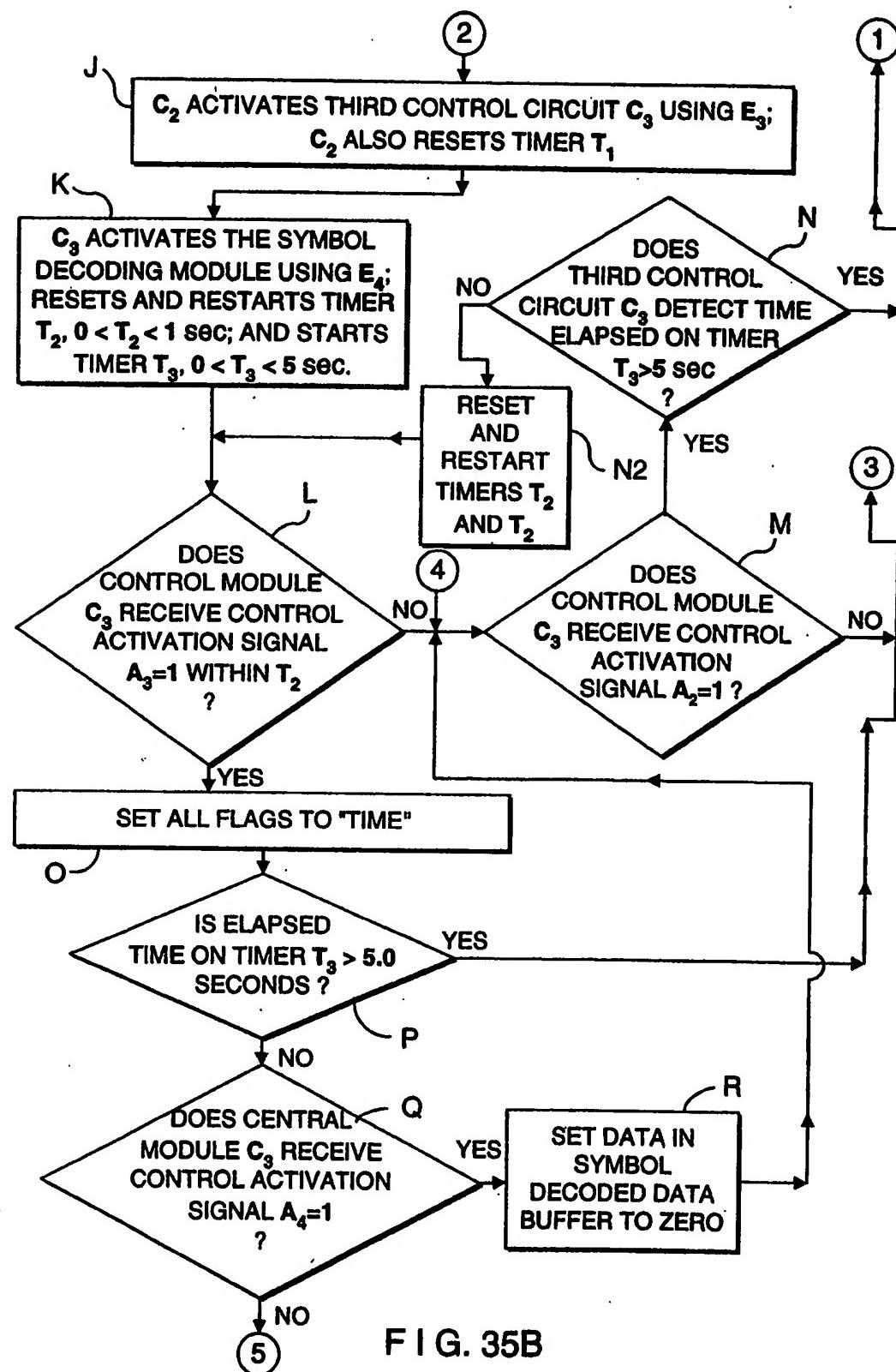


FIG. 35B

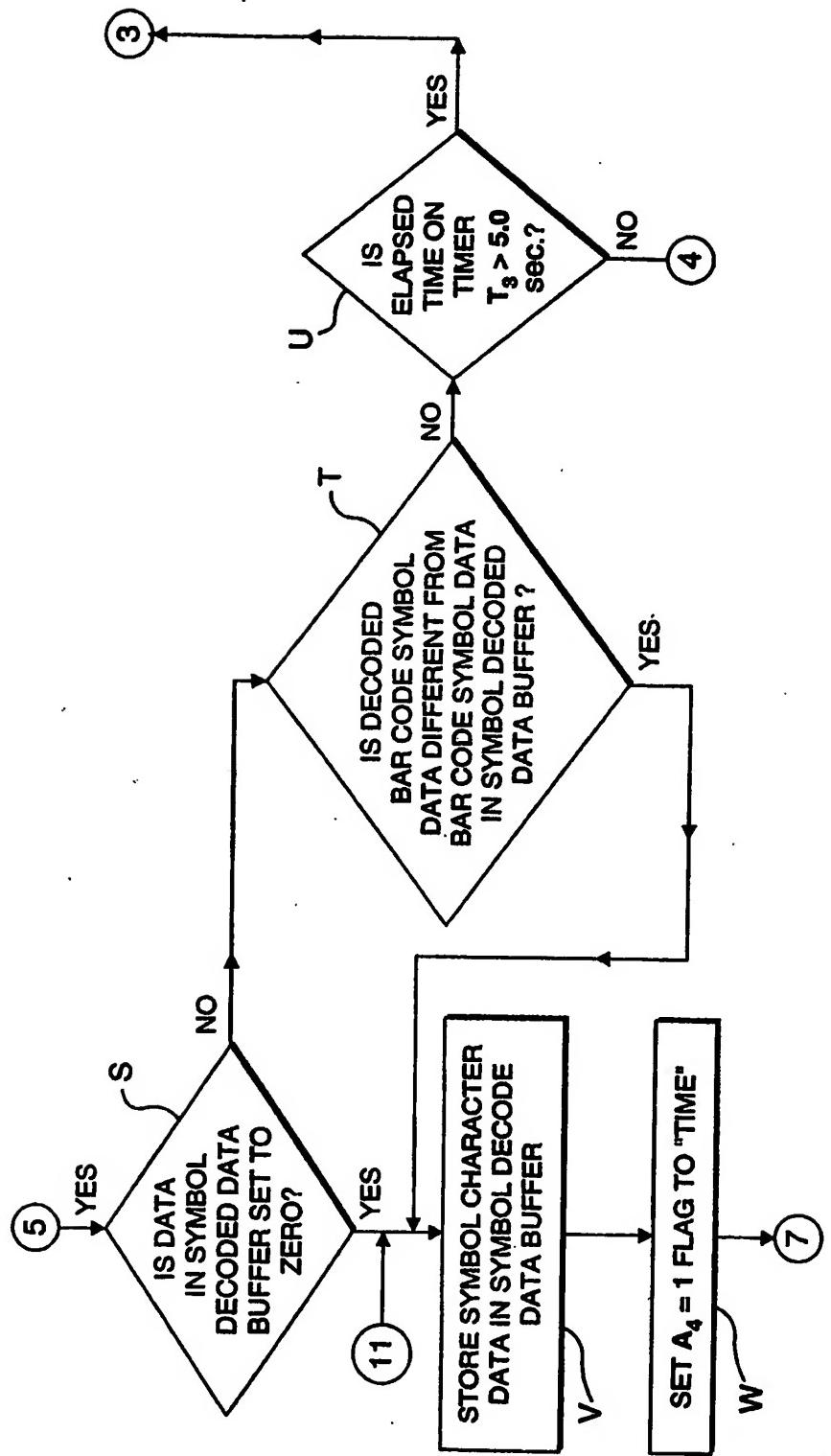


FIG. 35C

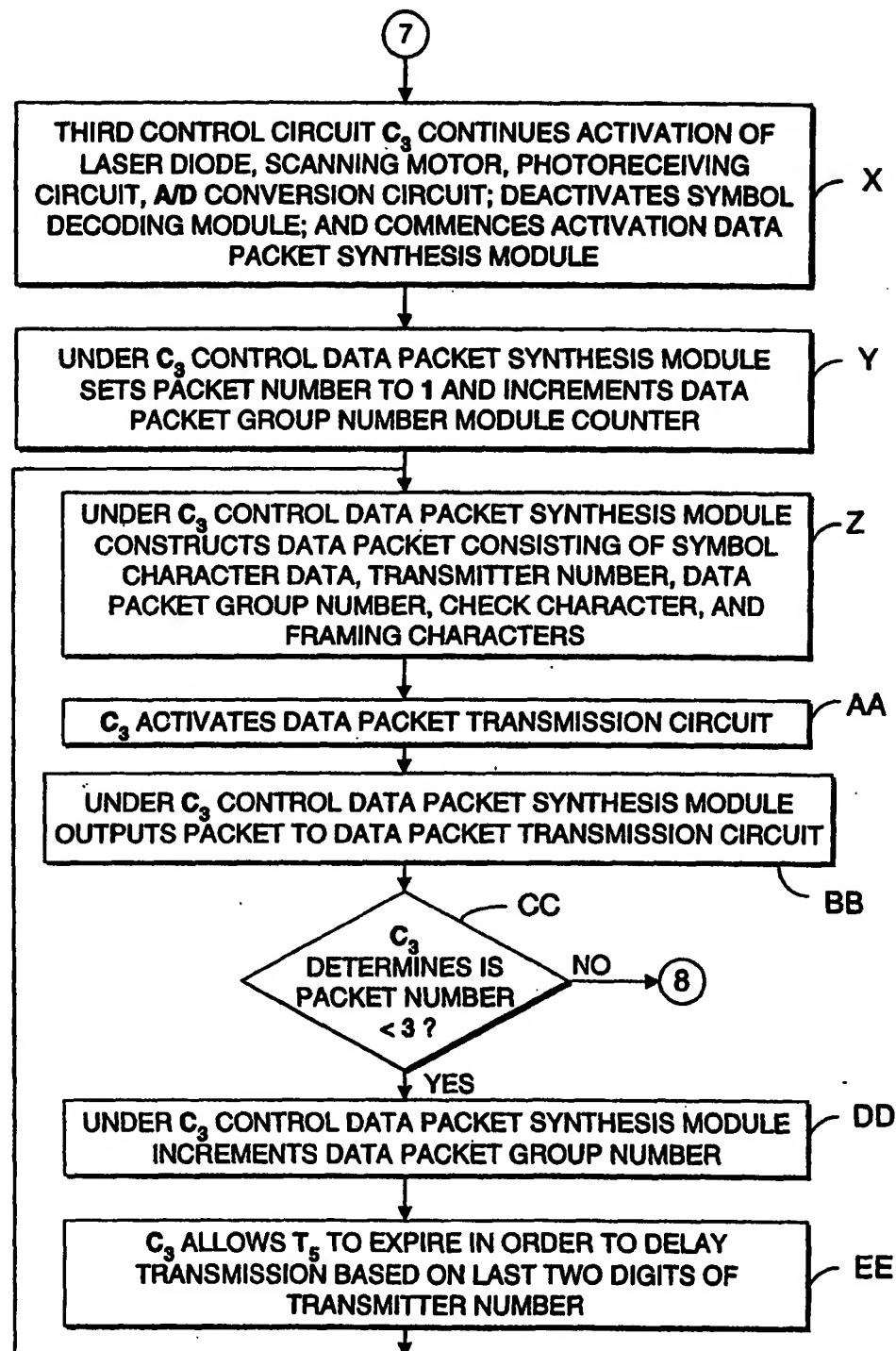
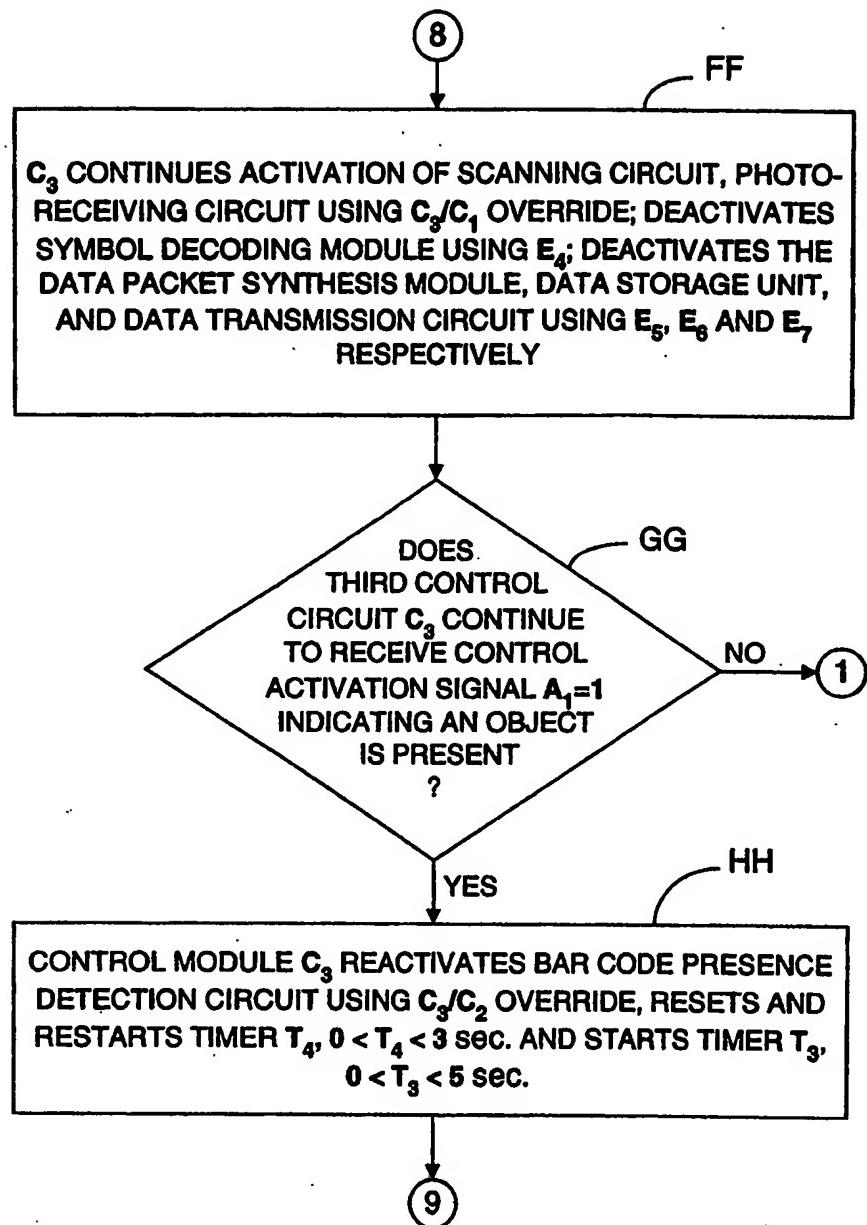


FIG. 35D

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F I G. 35E

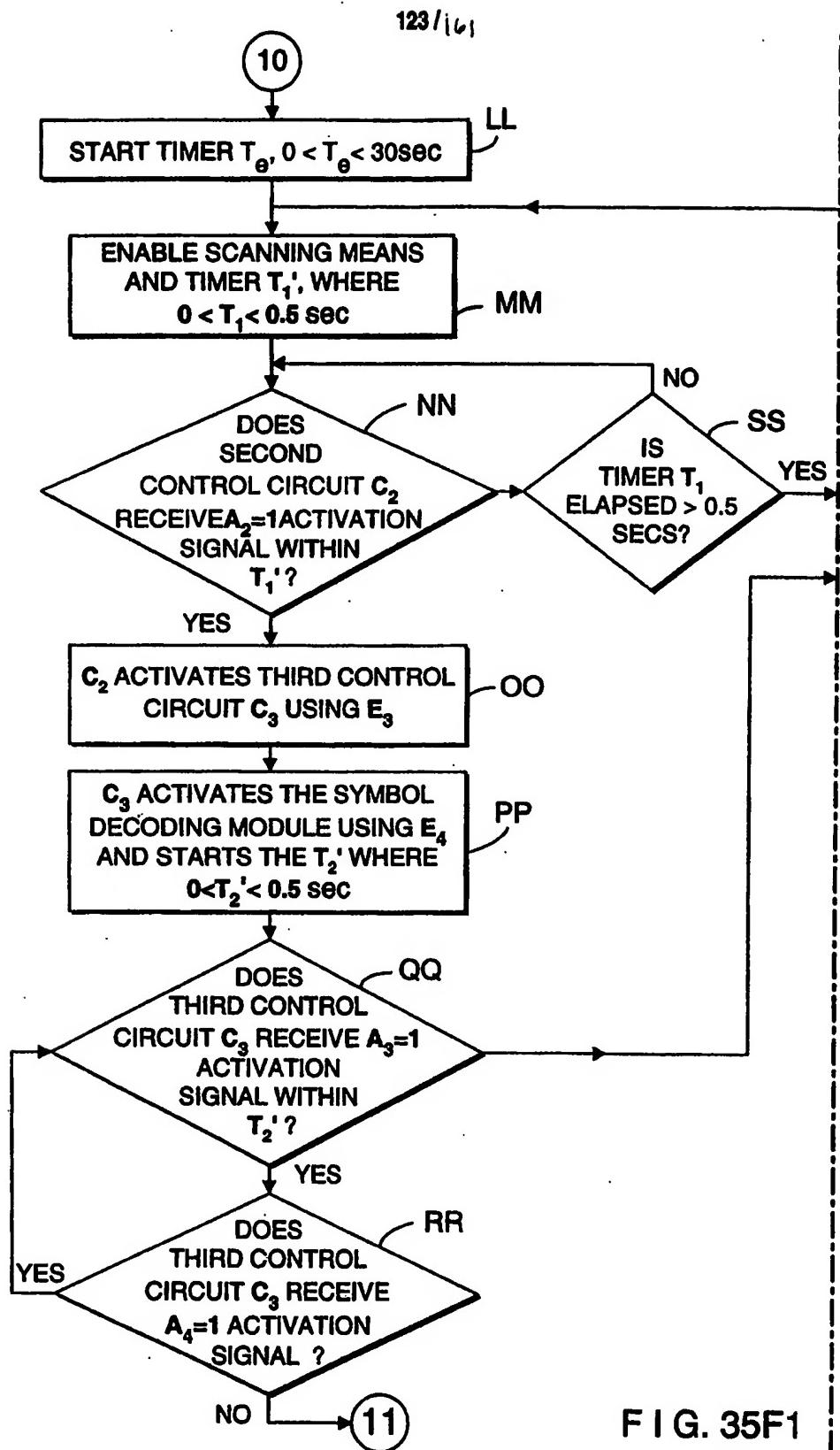


FIG. 35F1

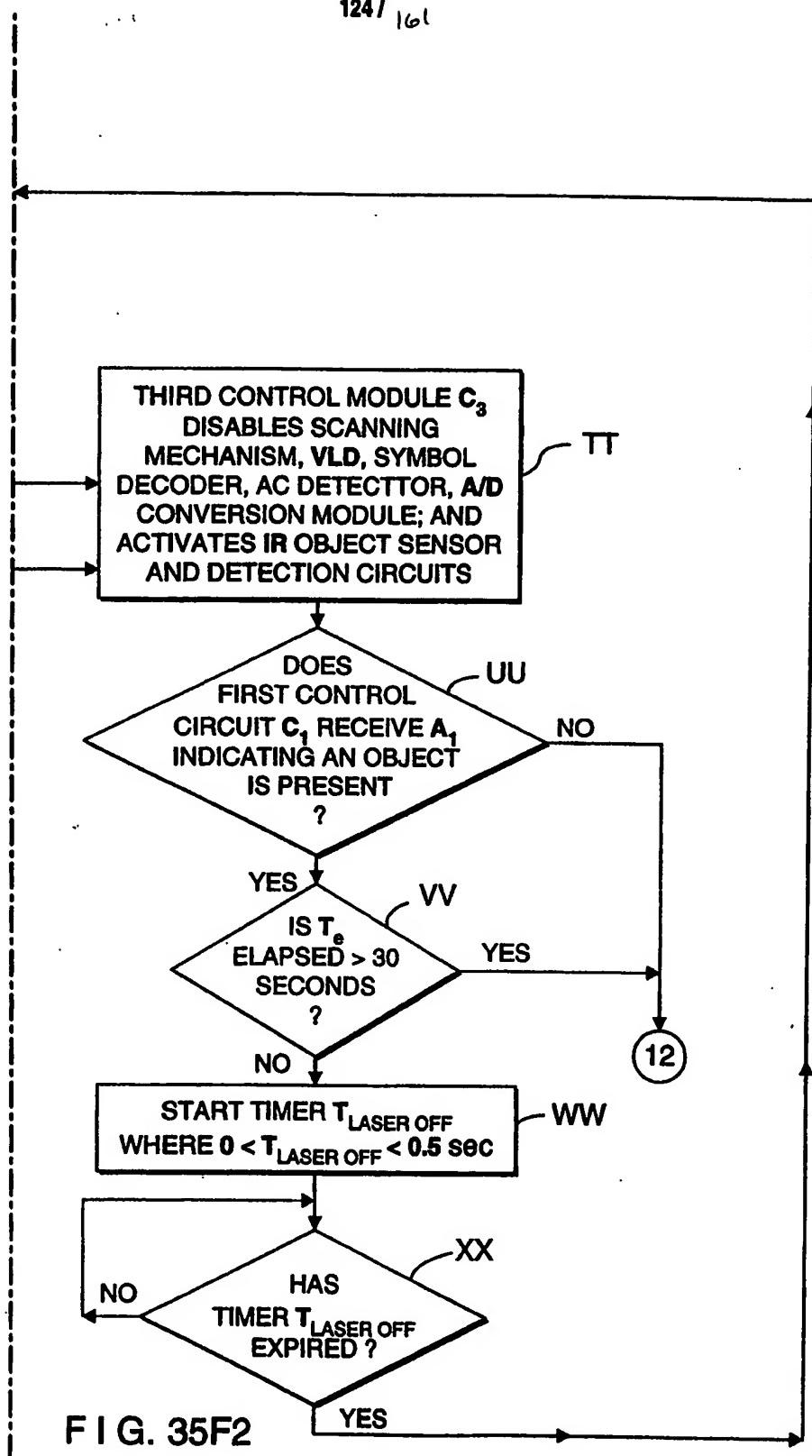
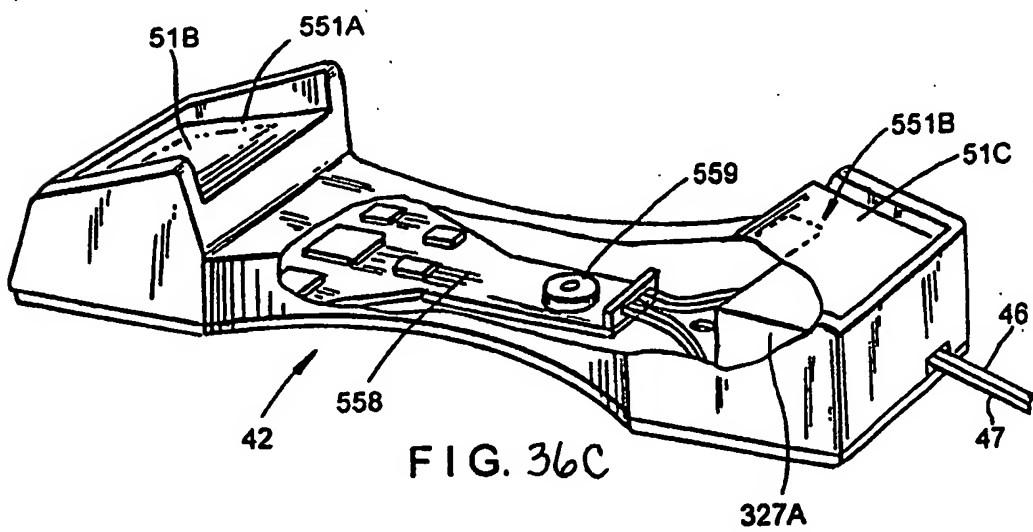
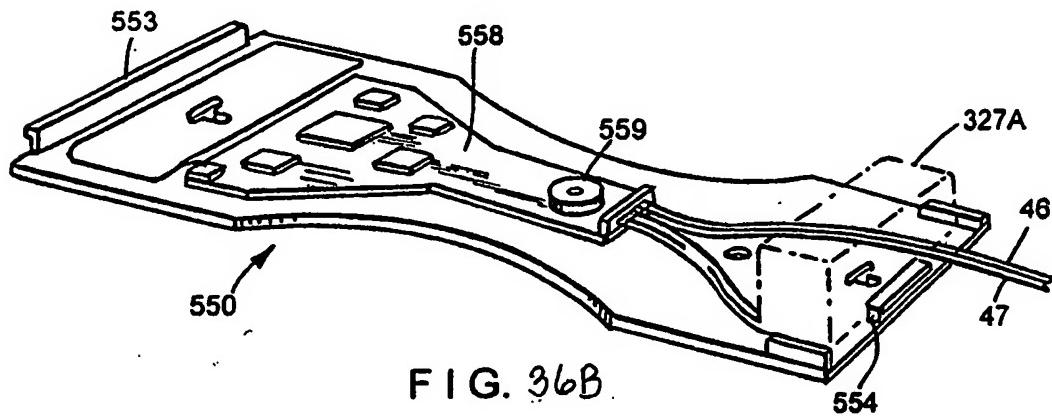
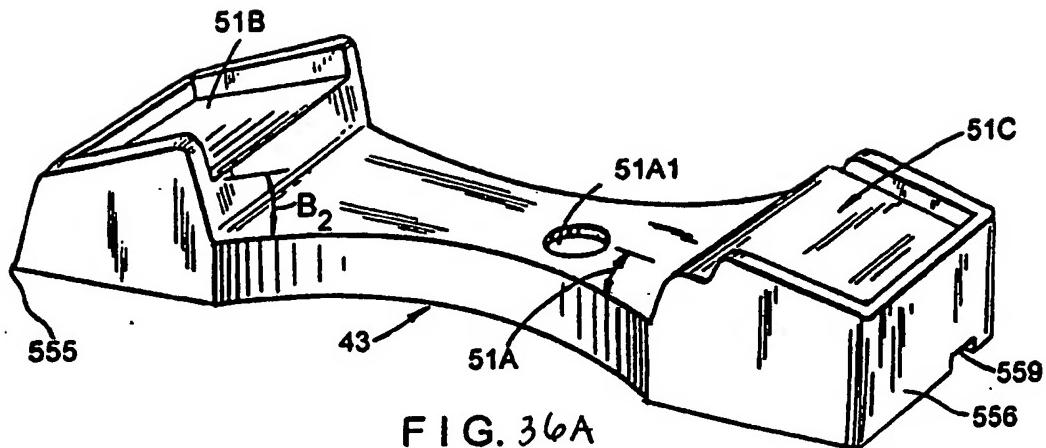


FIG. 35F2

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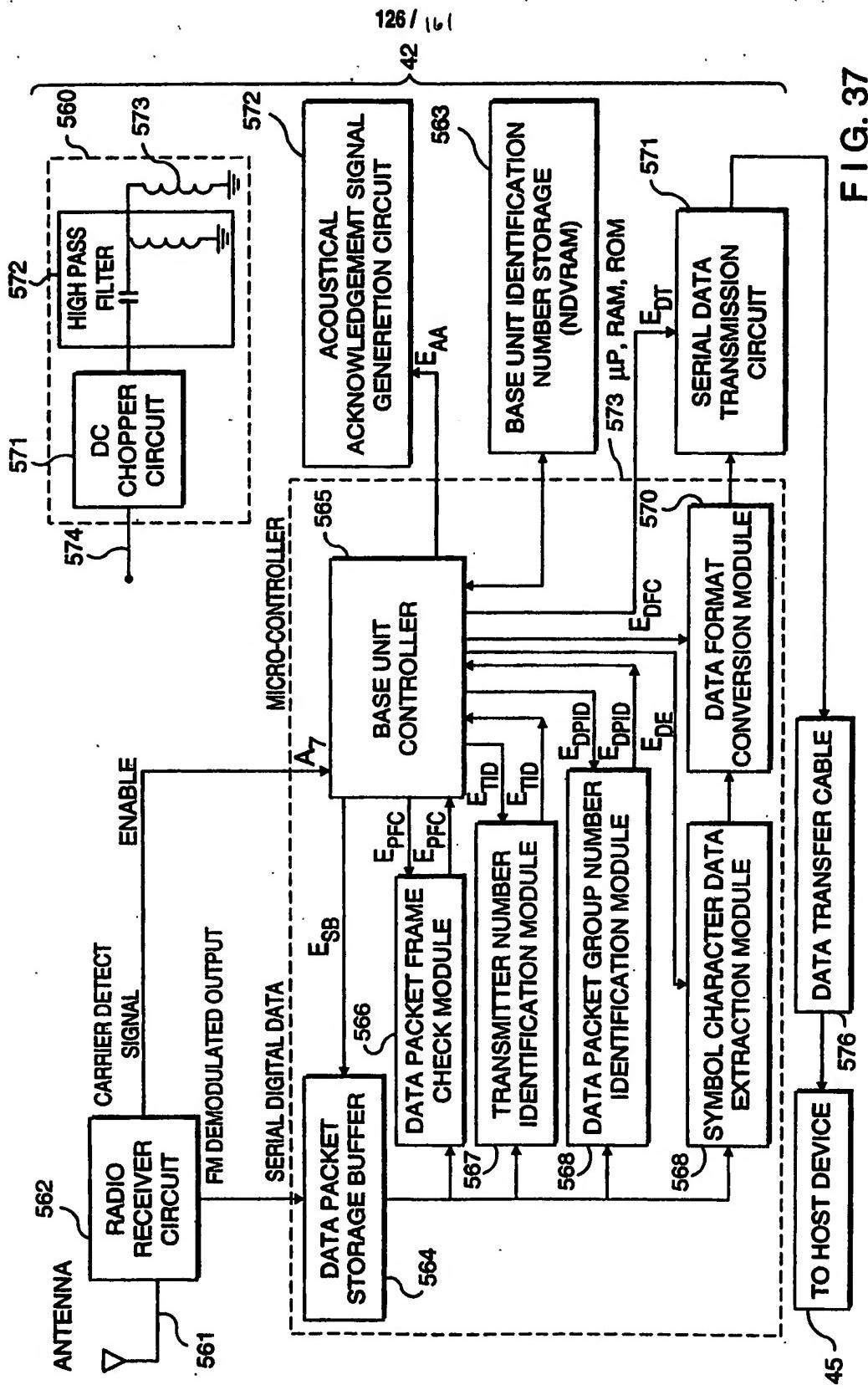


FIG. 37

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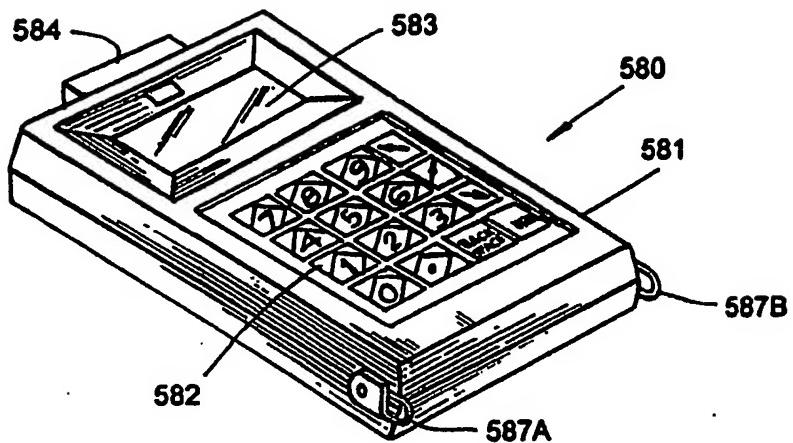


FIG. 38A

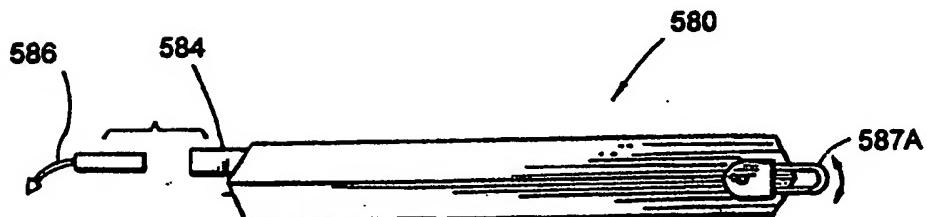


FIG. 38B

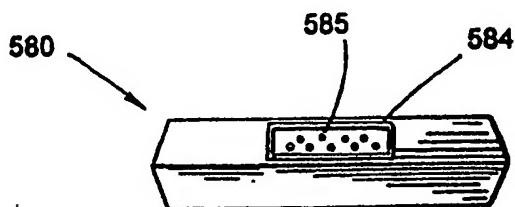


FIG. 38C

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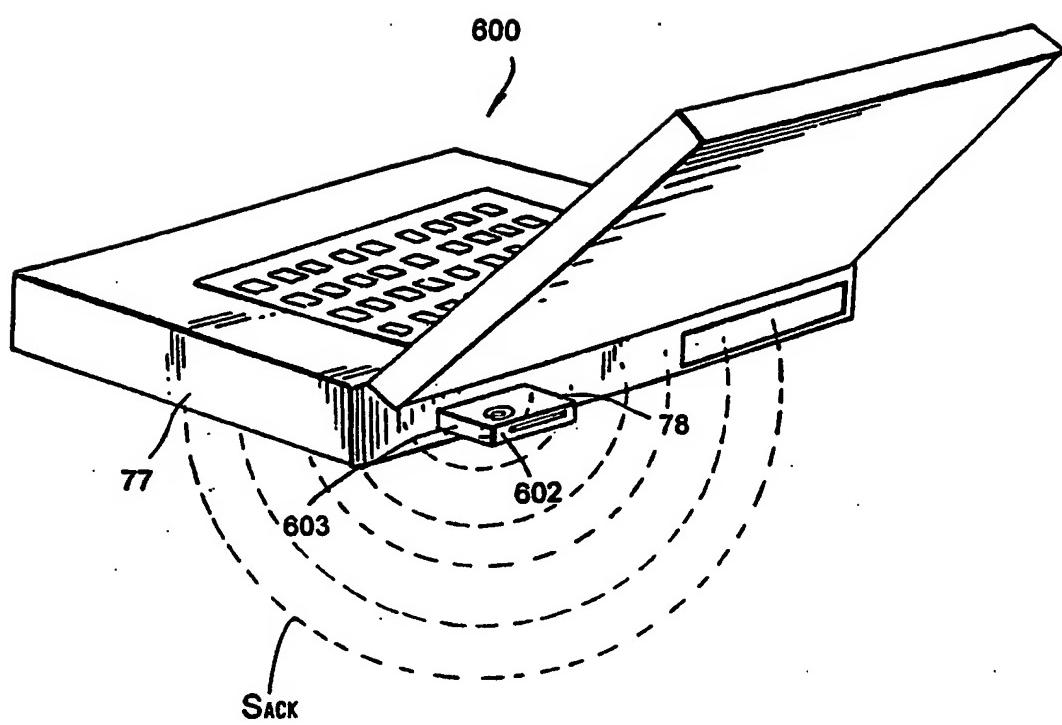


FIG. 39

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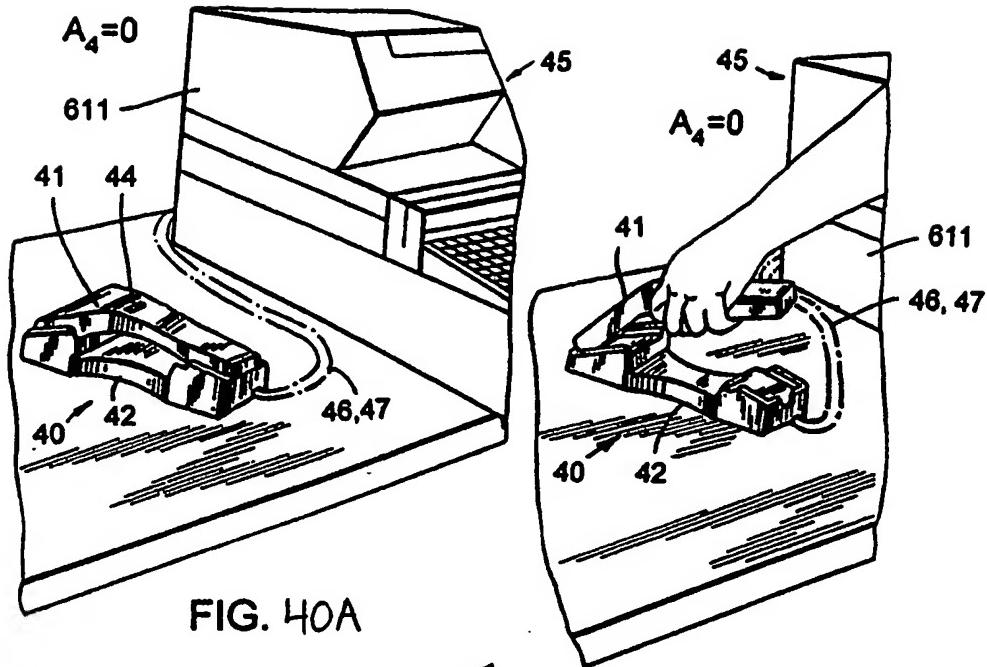


FIG. 40A

FIG. 40B

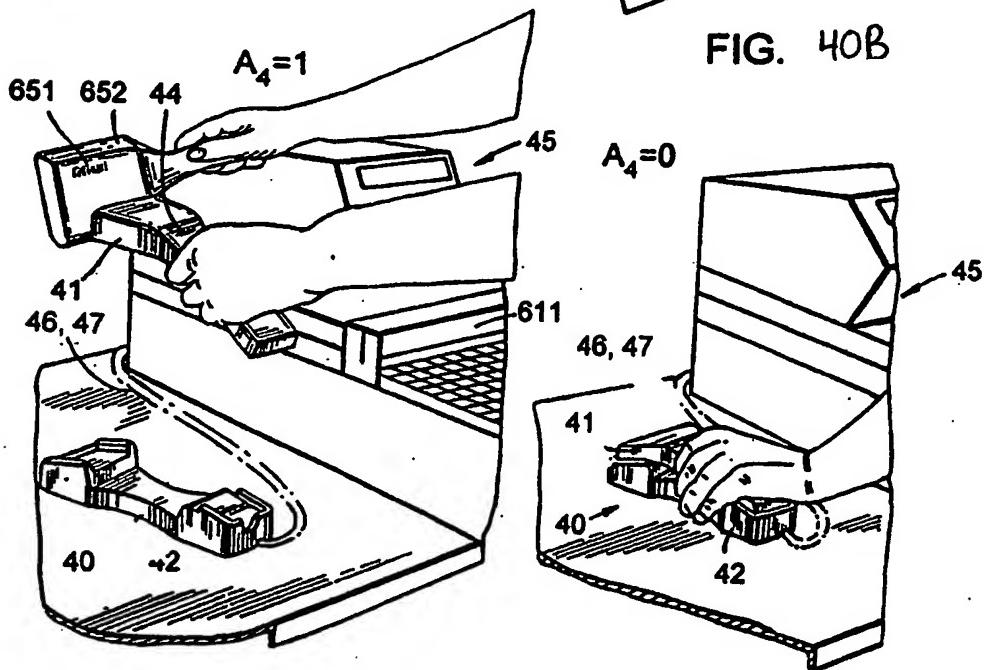


FIG. 40C

FIG. 40D

$A_4=1$

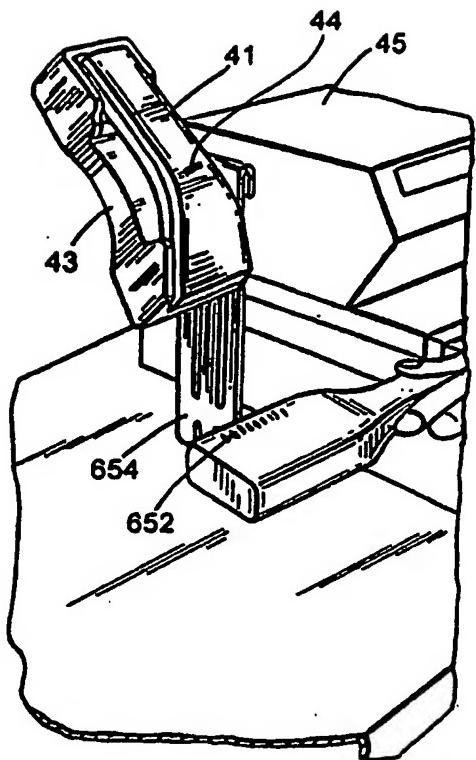


FIG. 41A

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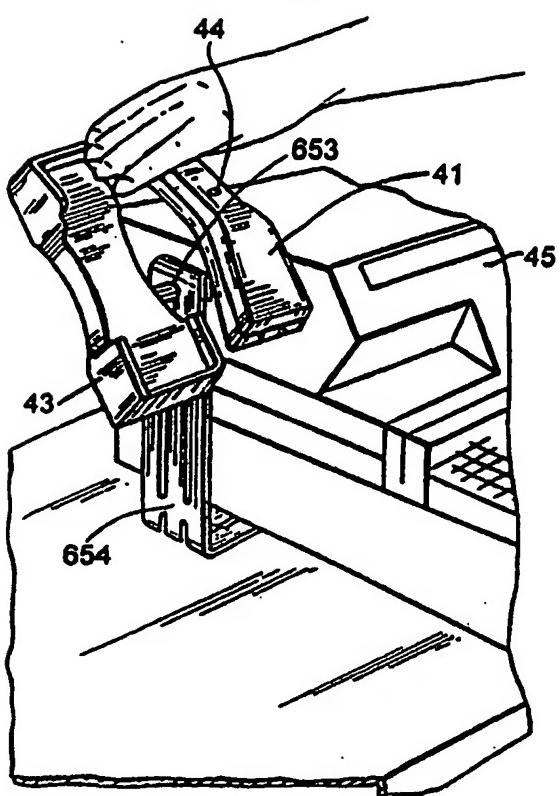


FIG. 41B

$A_4=1$

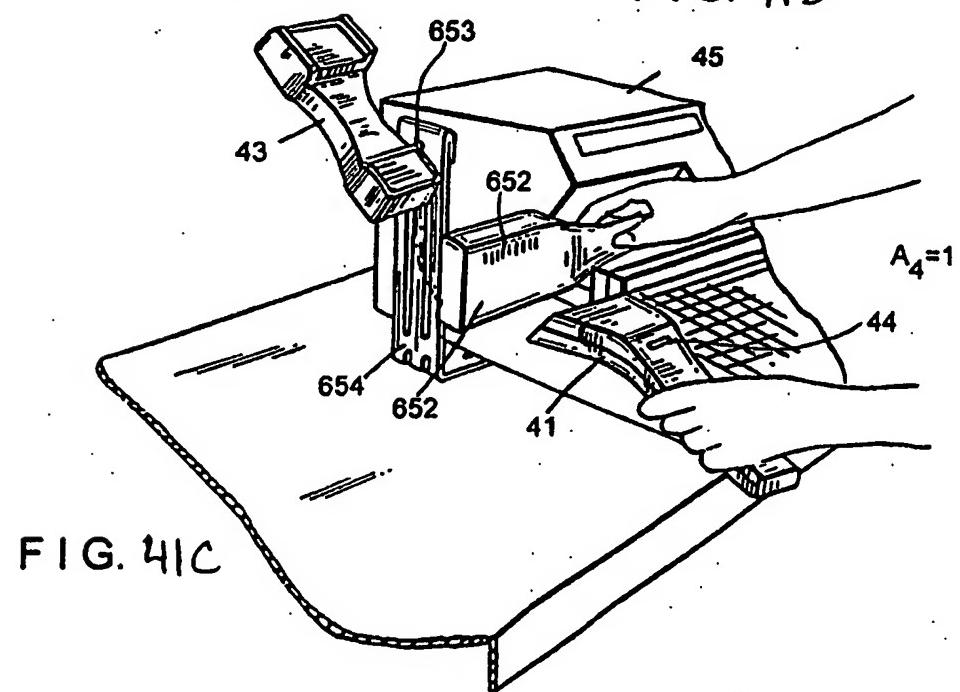


FIG. 41C

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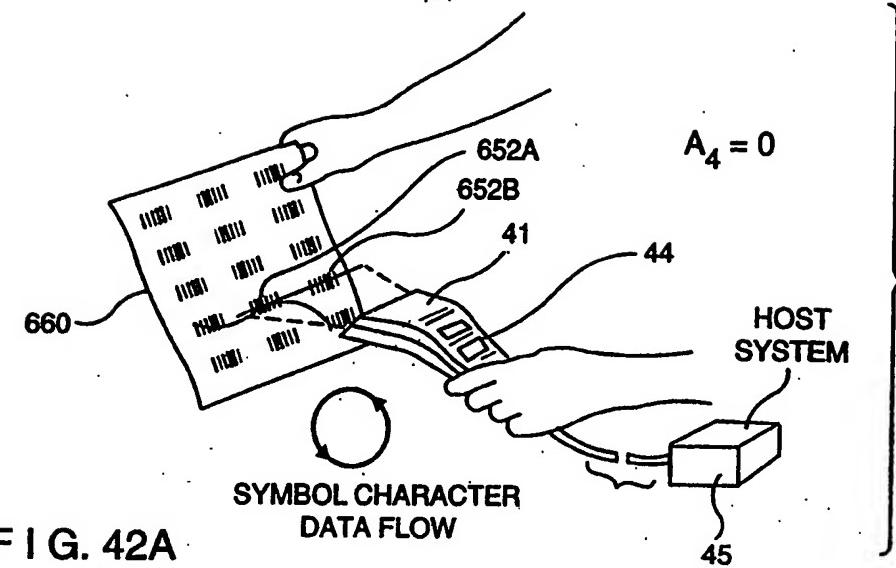


FIG. 42A

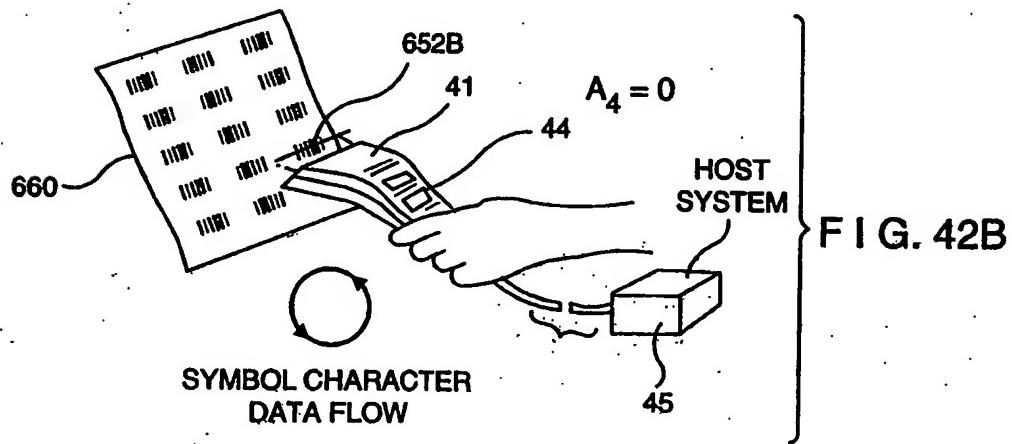


FIG. 42B

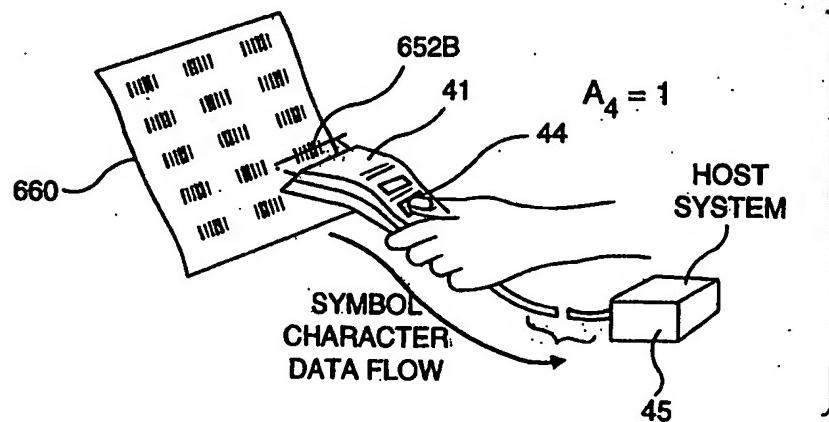


FIG. 42C

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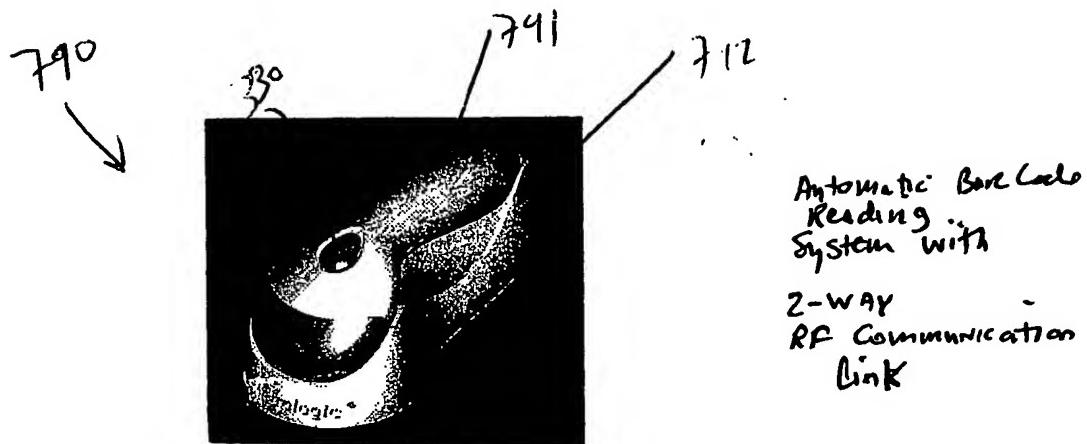


FIG. 43A



792 FIG. 43B

FIG. 43C

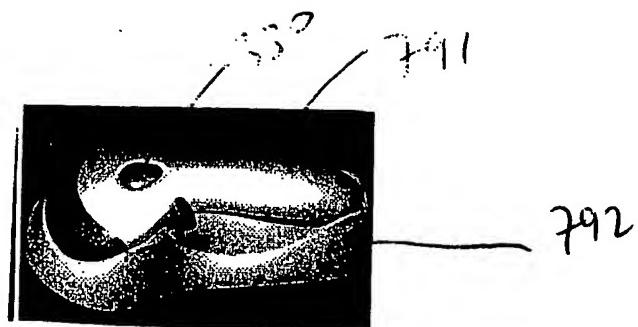


FIG. 43D

FIG. 43 F

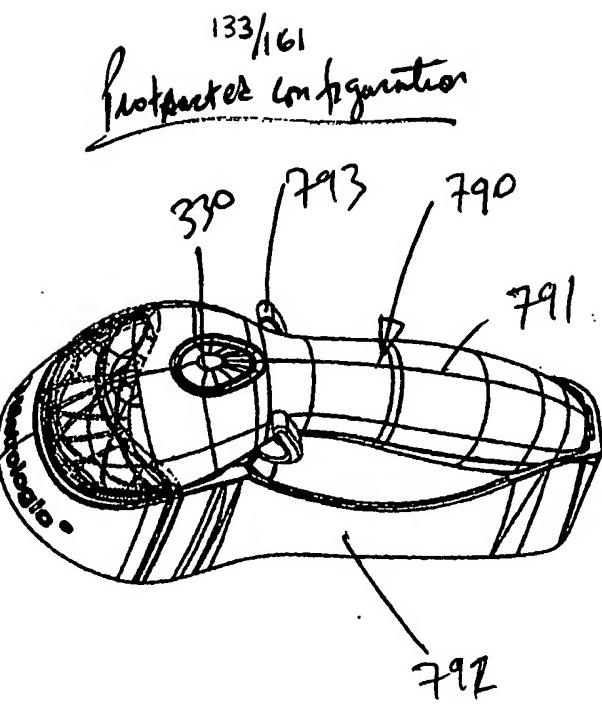
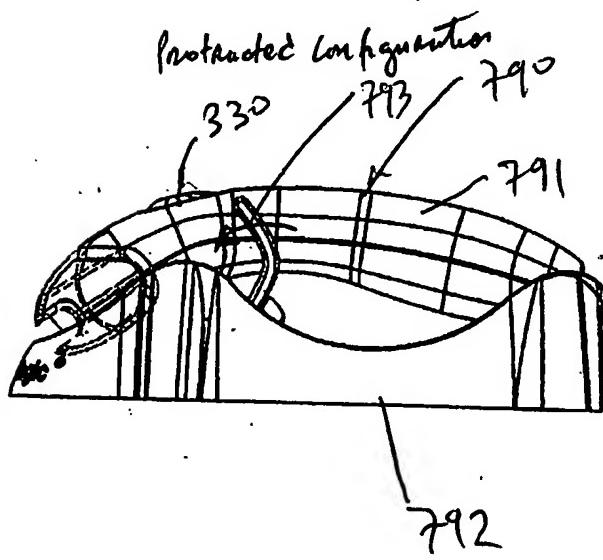


FIG. 43 E



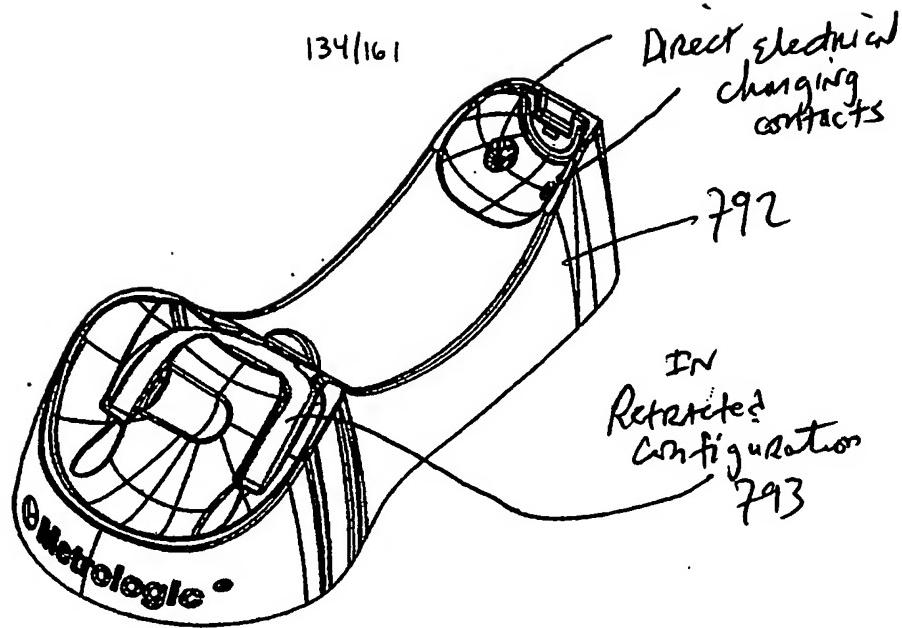


FIG. 43G

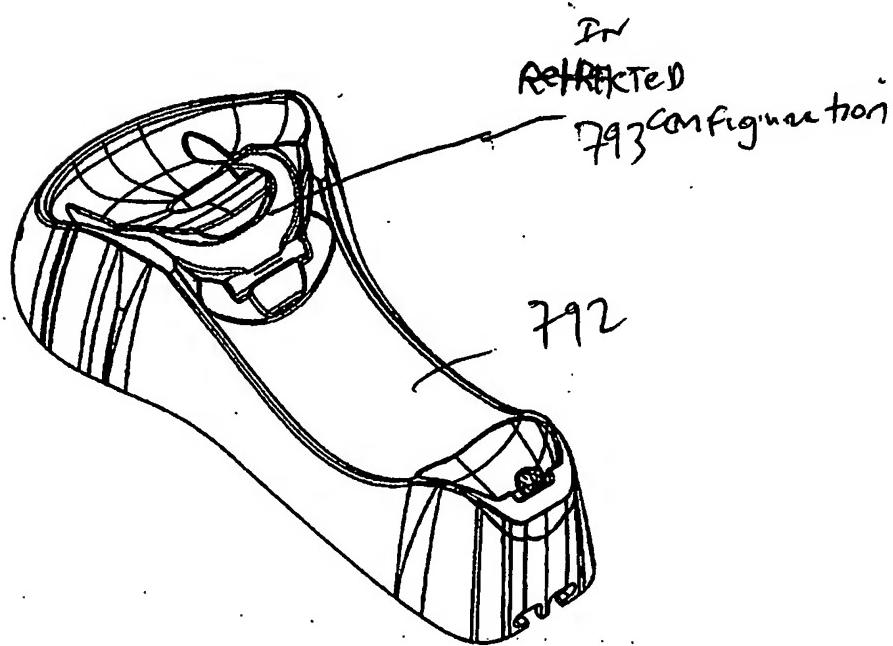


FIG. 43A

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Retracted configuration

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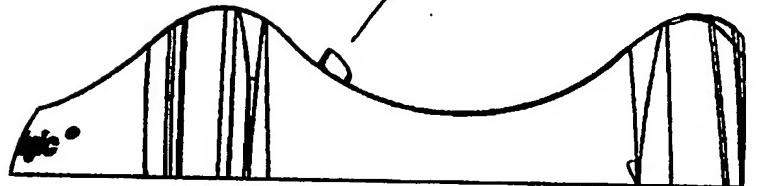
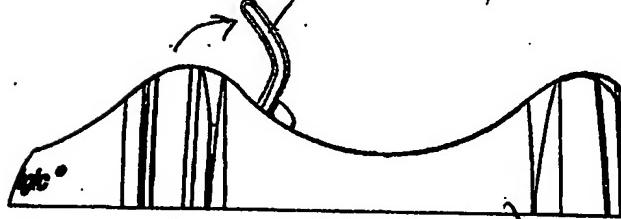


FIG. 43 I

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Projected Configuration

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P16.43 J

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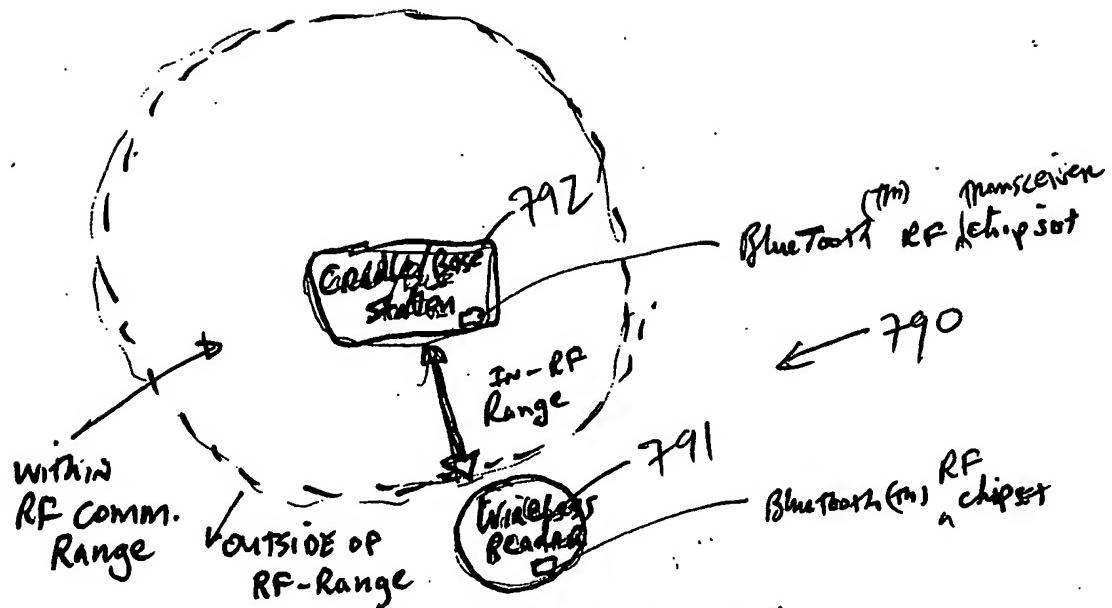


FIG. 44 A1

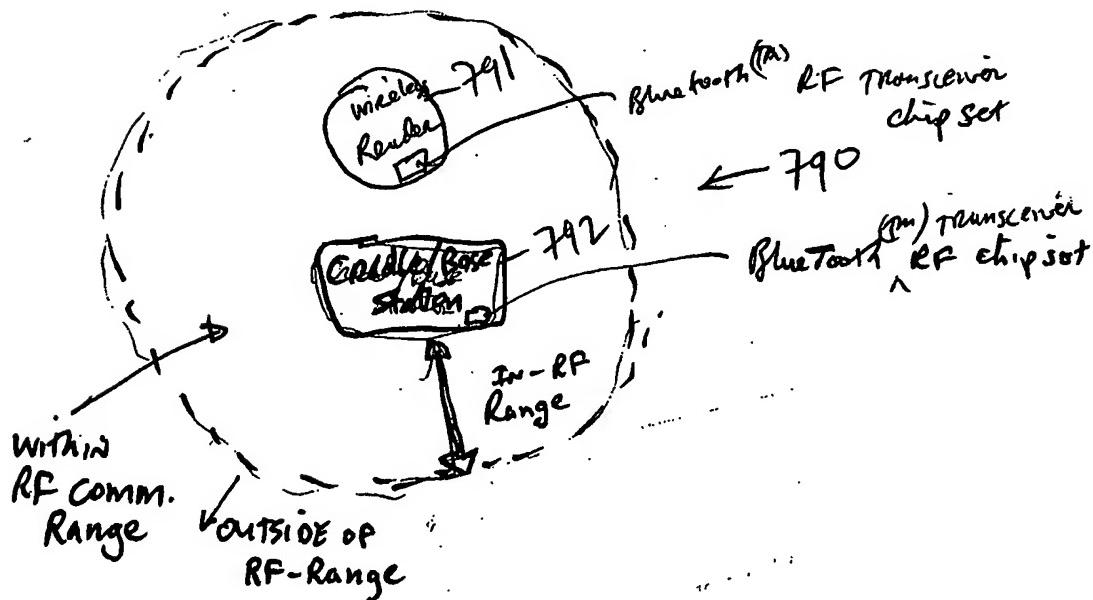
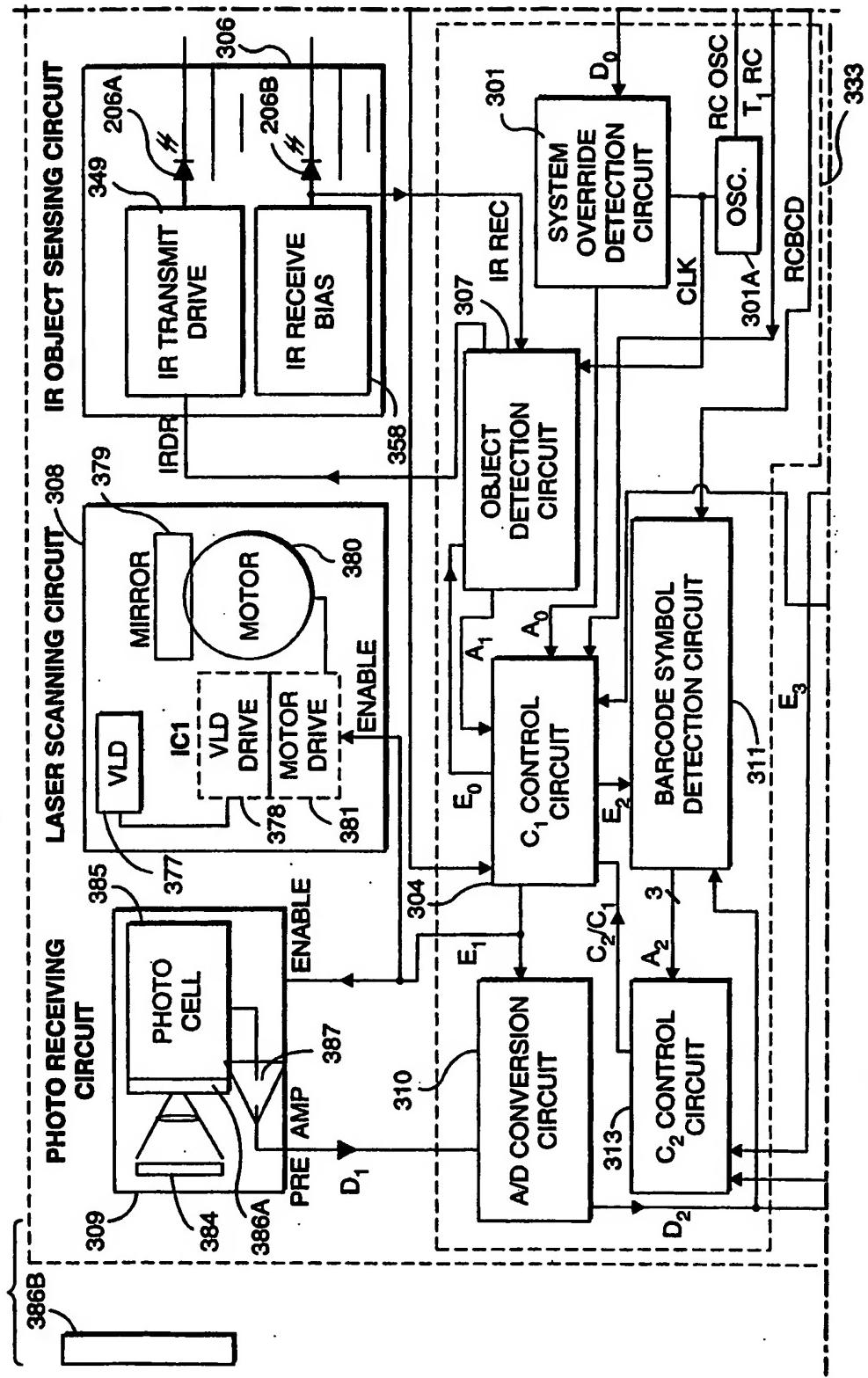
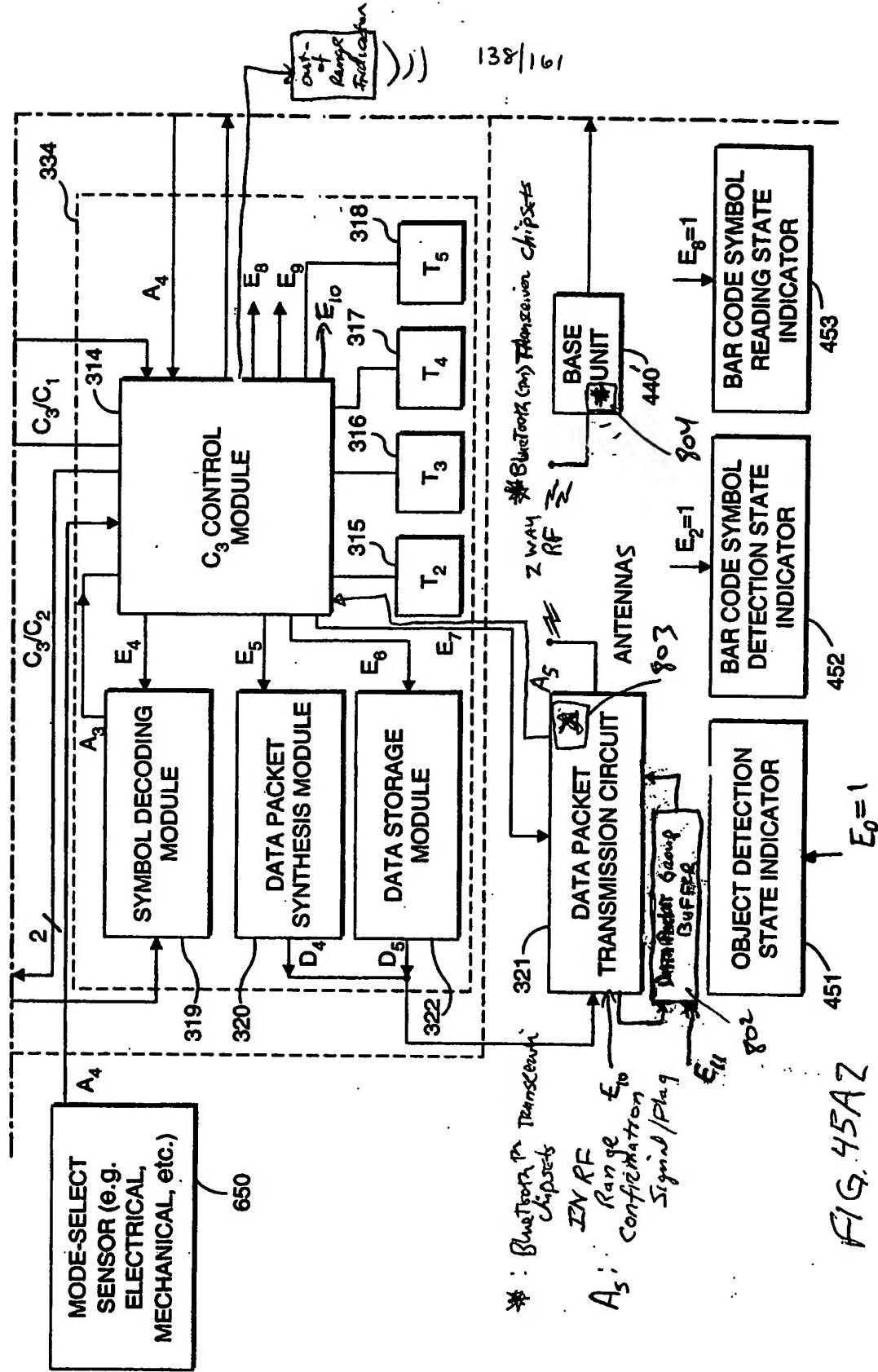


FIG. 44 A2

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F/G 45A1



F/G. 45A2

$E_0 = 1$

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FIG. 45A3

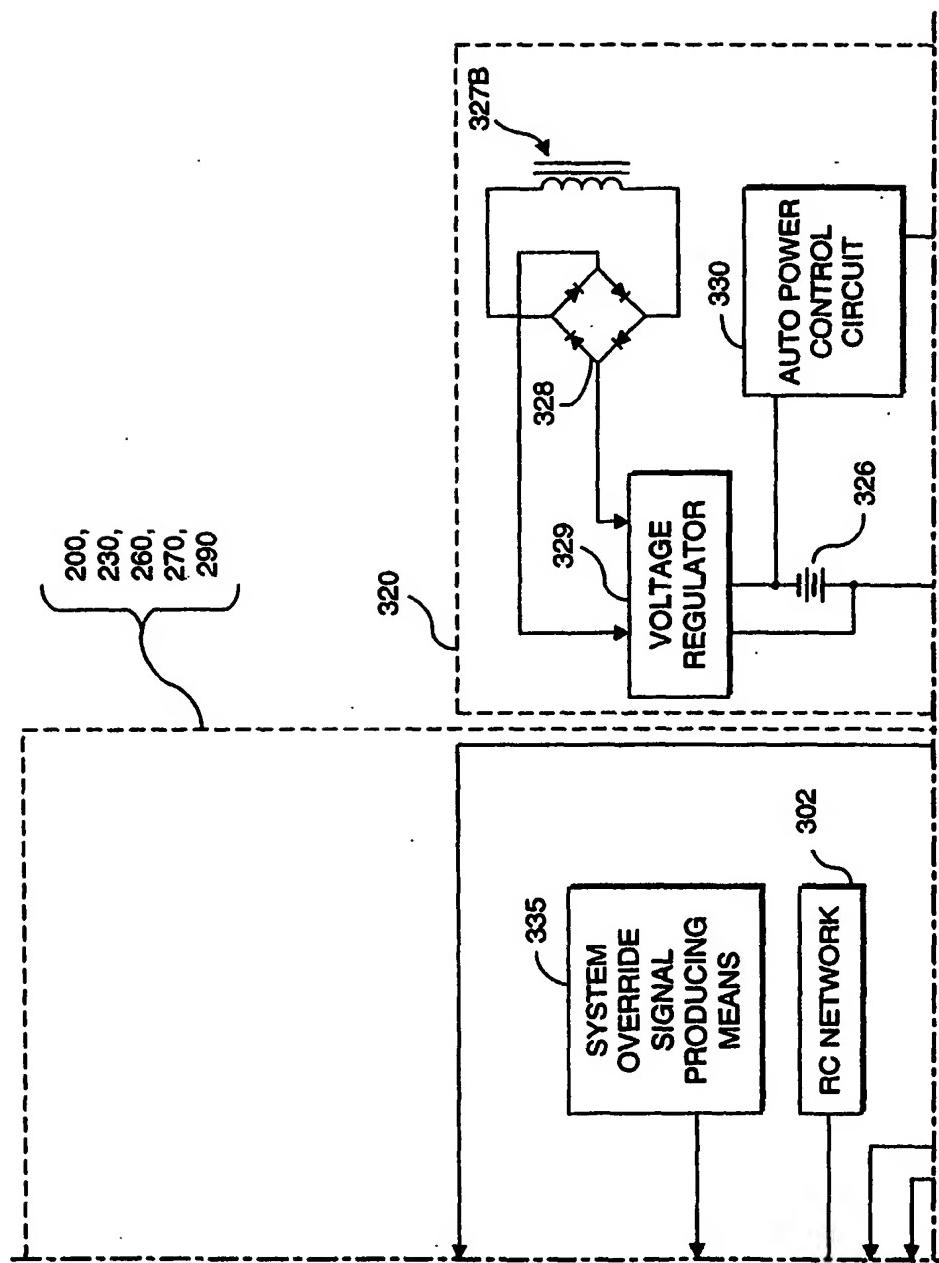
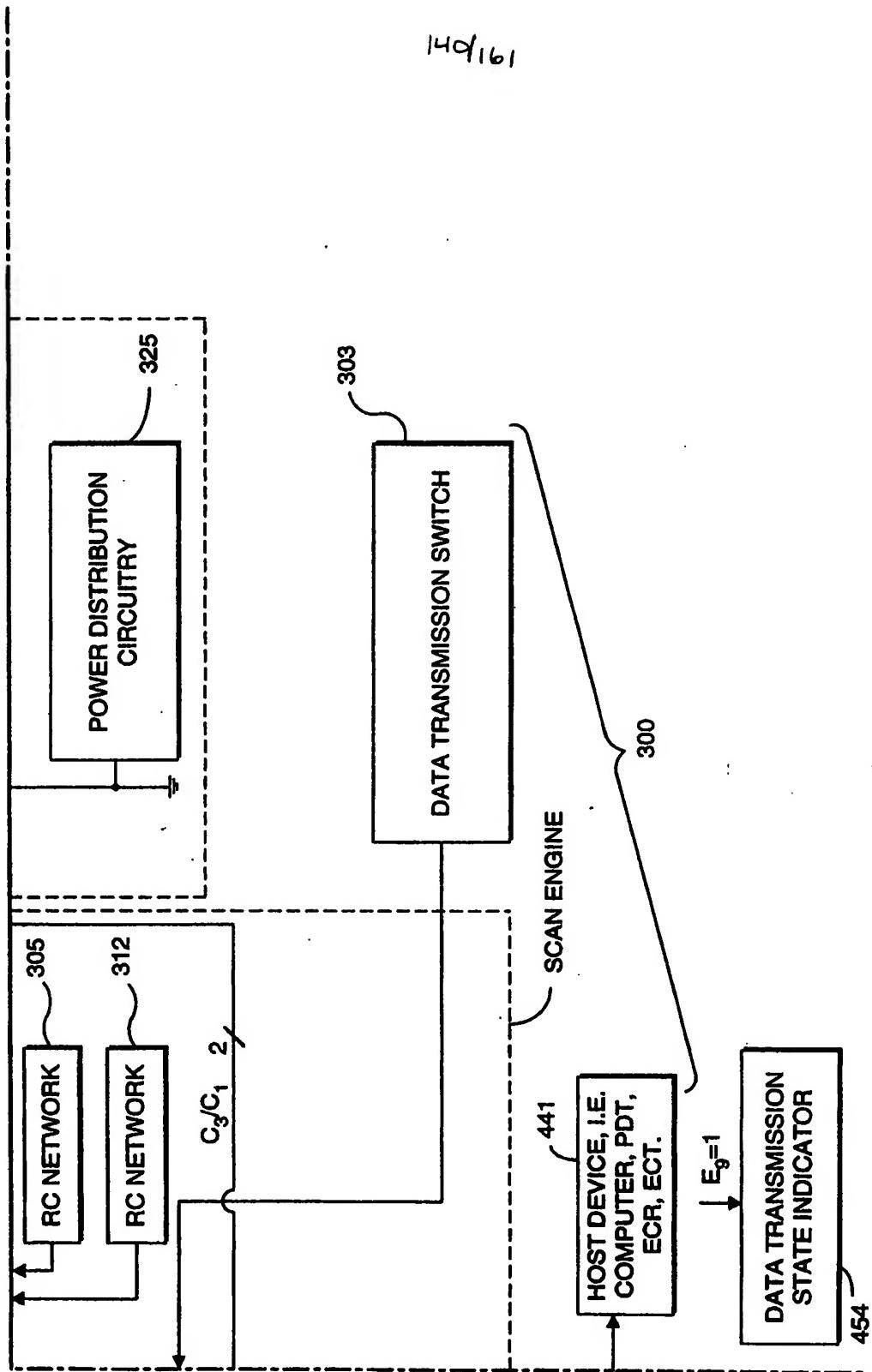


FIG. 45A4



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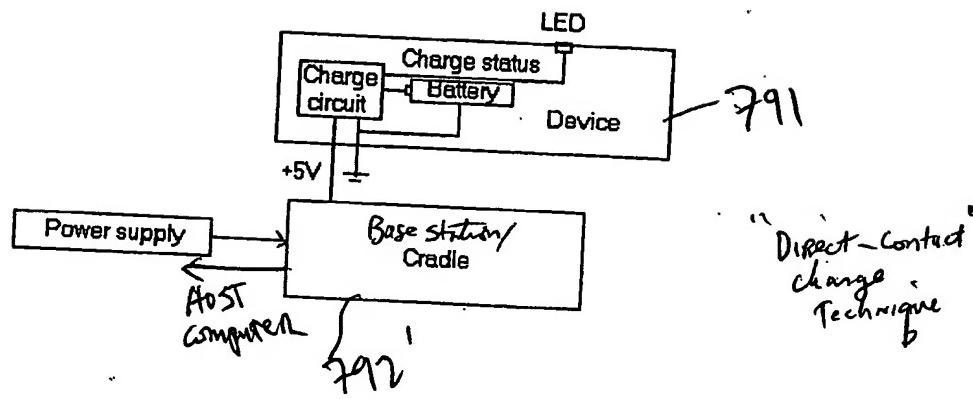


FIG. 45B

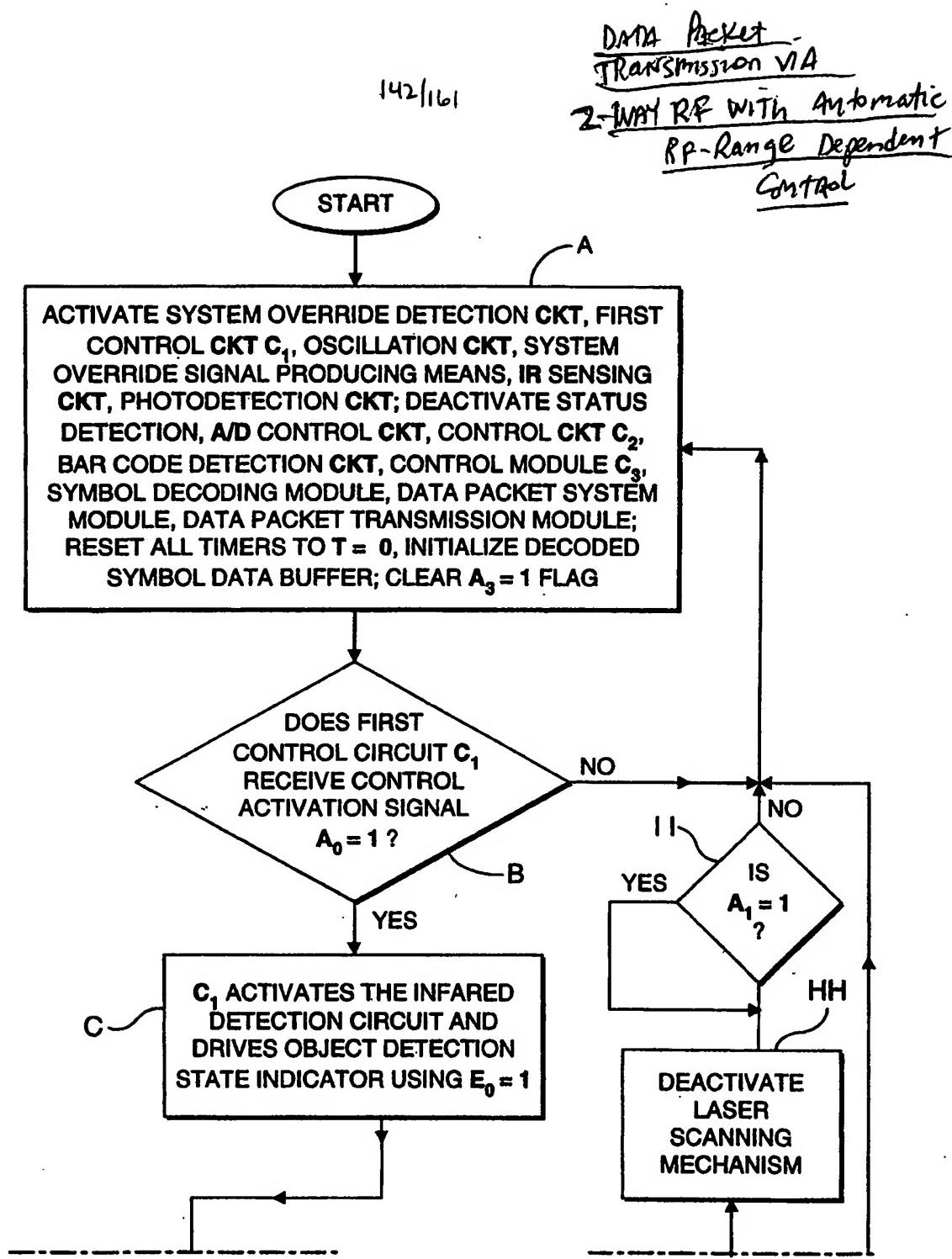


FIG.46A1

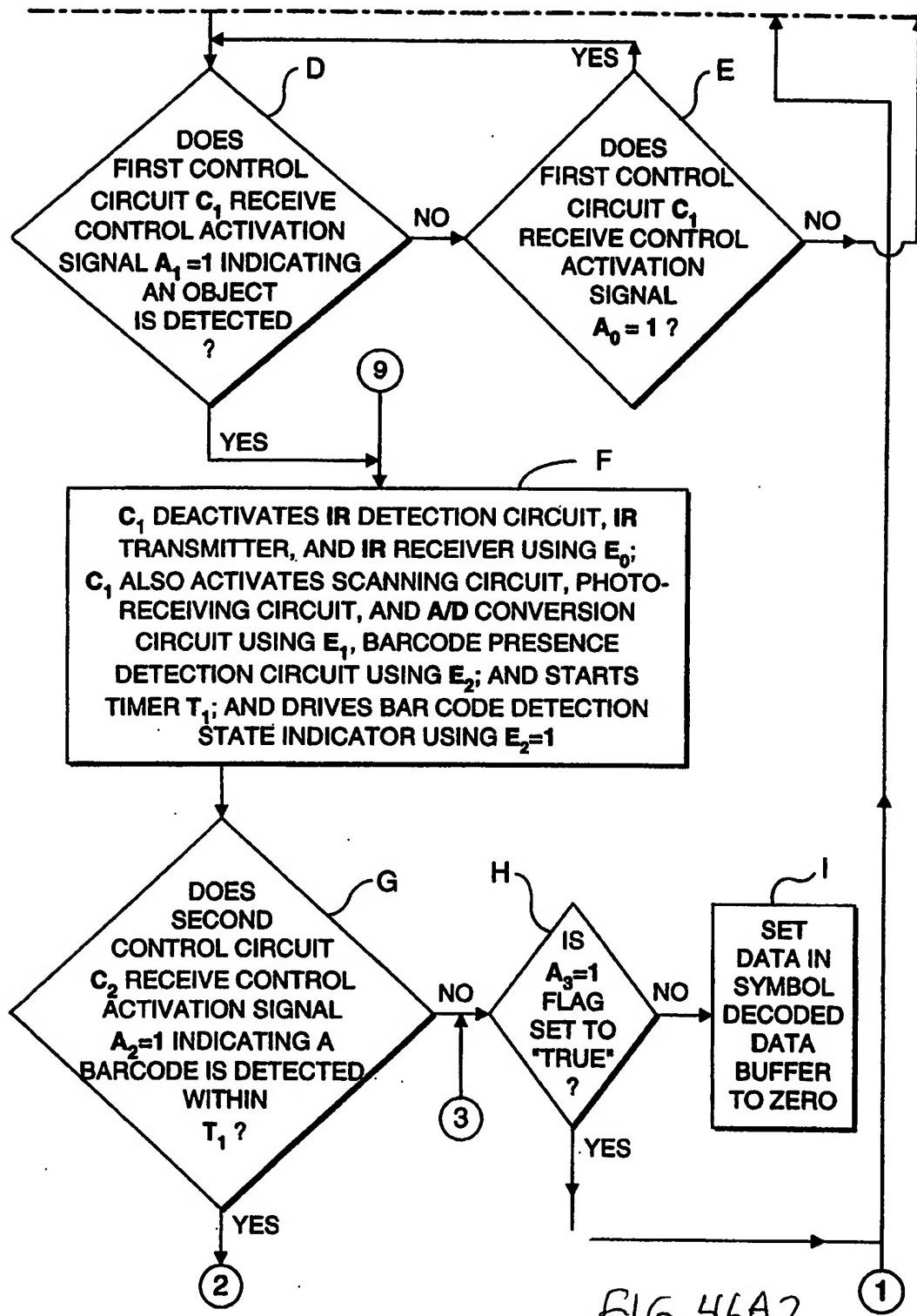


FIG 46A2

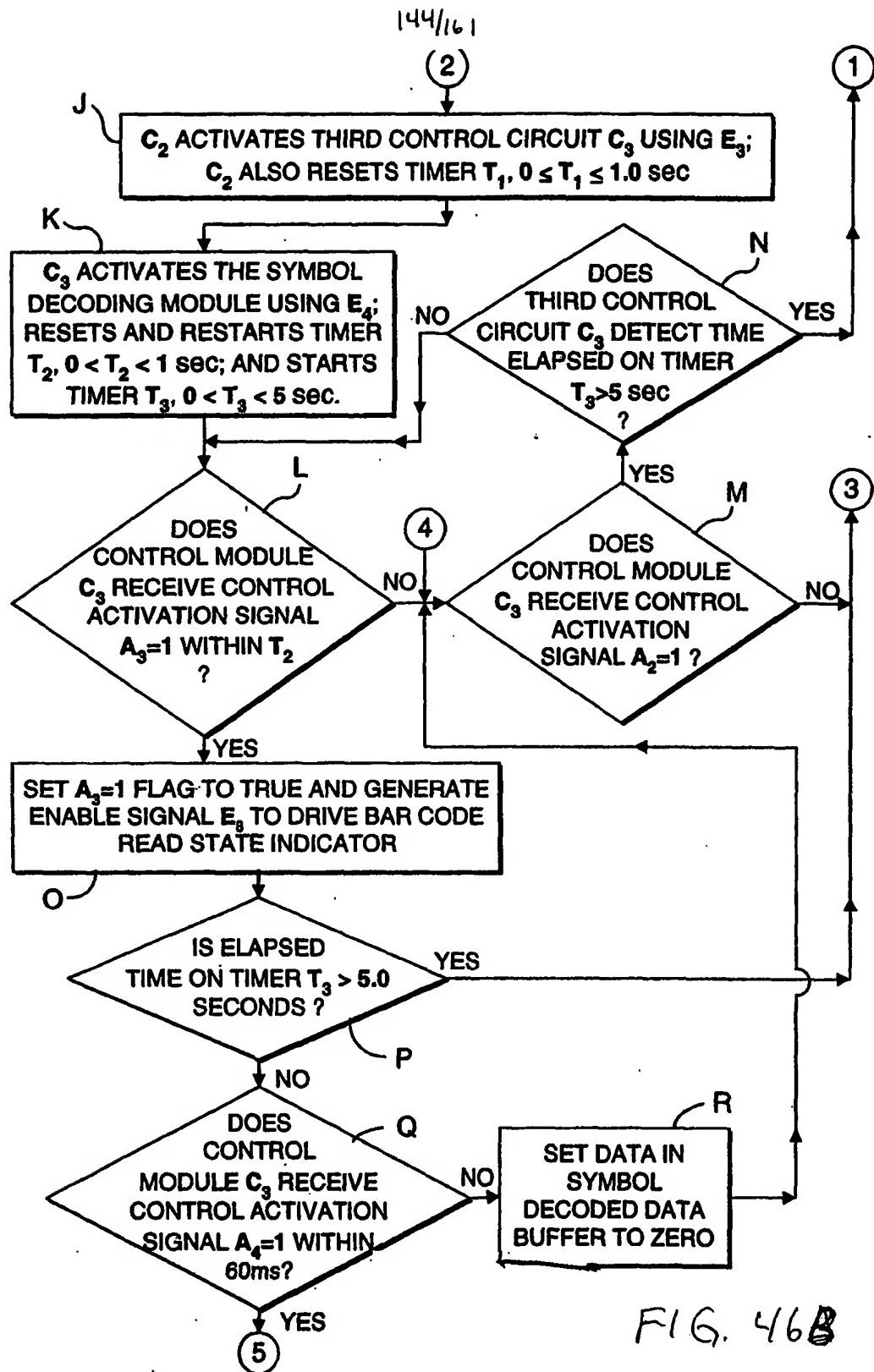
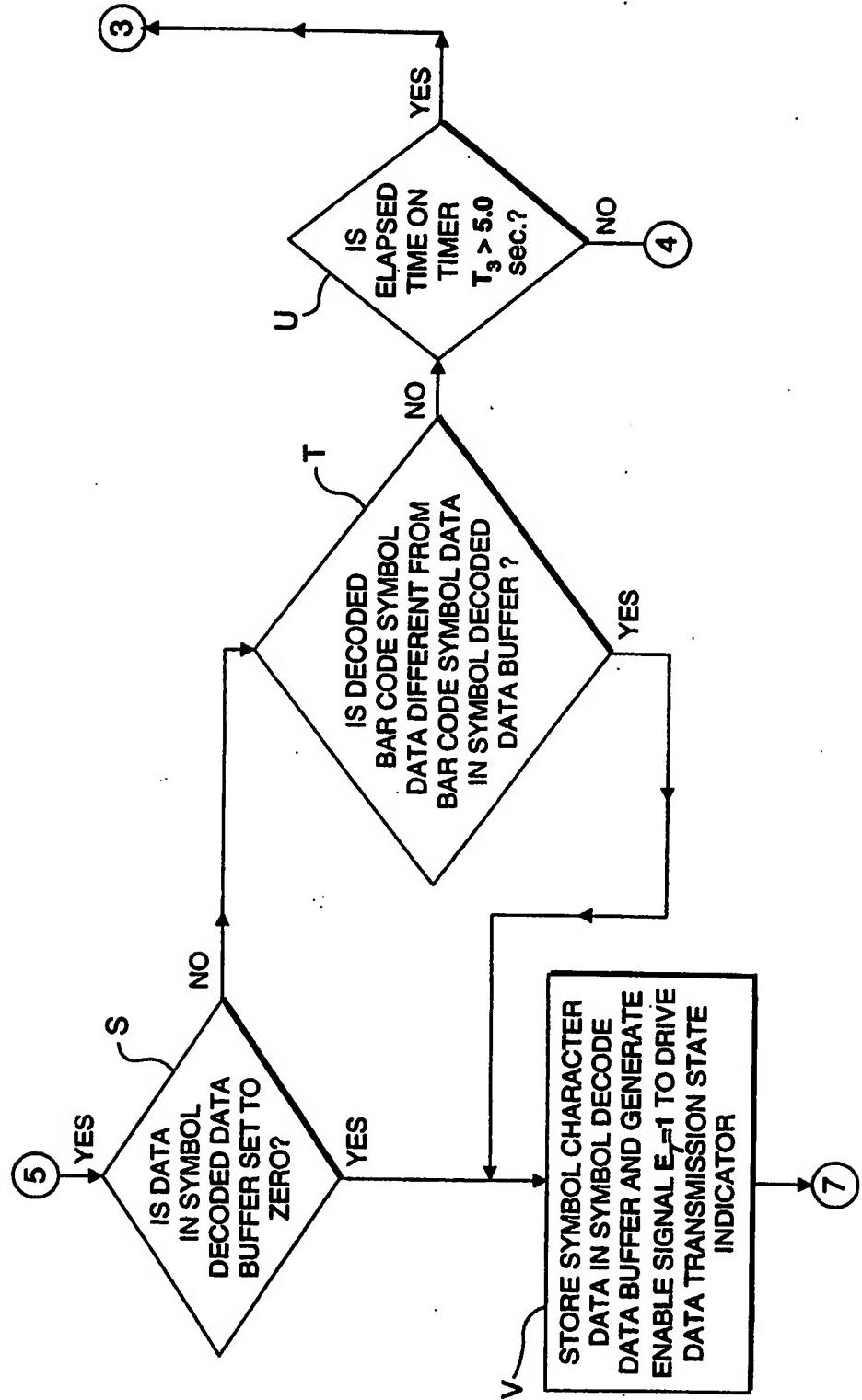


FIG. 46B

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F16 46C1

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7

THIRD CONTROL CIRCUIT  $C_3$  CONTINUES ACTIVATION OF LASER DIODE, SCANNING MOTOR, PHOTORECEIVING CIRCUIT, A/D CONVERSION CIRCUIT; DEACTIVATES SYMBOL DECODING MODULE; AND COMMENCES ACTIVATION DATA PACKET SYNTHESIS MODULE

W

UNDER  $C_3$  CONTROL, DATA PACKET SYNTHESIS MODULE CONSTRUCTS DATA PACKET CONSISTING OF SYMBOL CHARACTER DATA, TRANSMITTER NUMBER, DATA PACKET GROUP NUMBER, CHECK CHARACTER AND FRAMING CHARACTERS

X

IS IN-RANGE CONFIRMATION Signal  
 $A_5=1$  ?

NO

YES

ARE DATA PACKET GROUP(S) STORED IN DATA PACKET GROUP BUFFER ?

NO

Z

YES

$C_3$  Control Module Generates Enable  $E_{11}=1$  Signal  
Reloading Buffered Data Packet Group(s)  
into Data Packet Transmission Circuit

AA

Control module  $C_3$  Generates Enable  
Signal  $E_{10}=1$  loading Currently  
Synthesized Data packet Group into  
Data packet transmission circuit

BB

11

FIG. 46 C2

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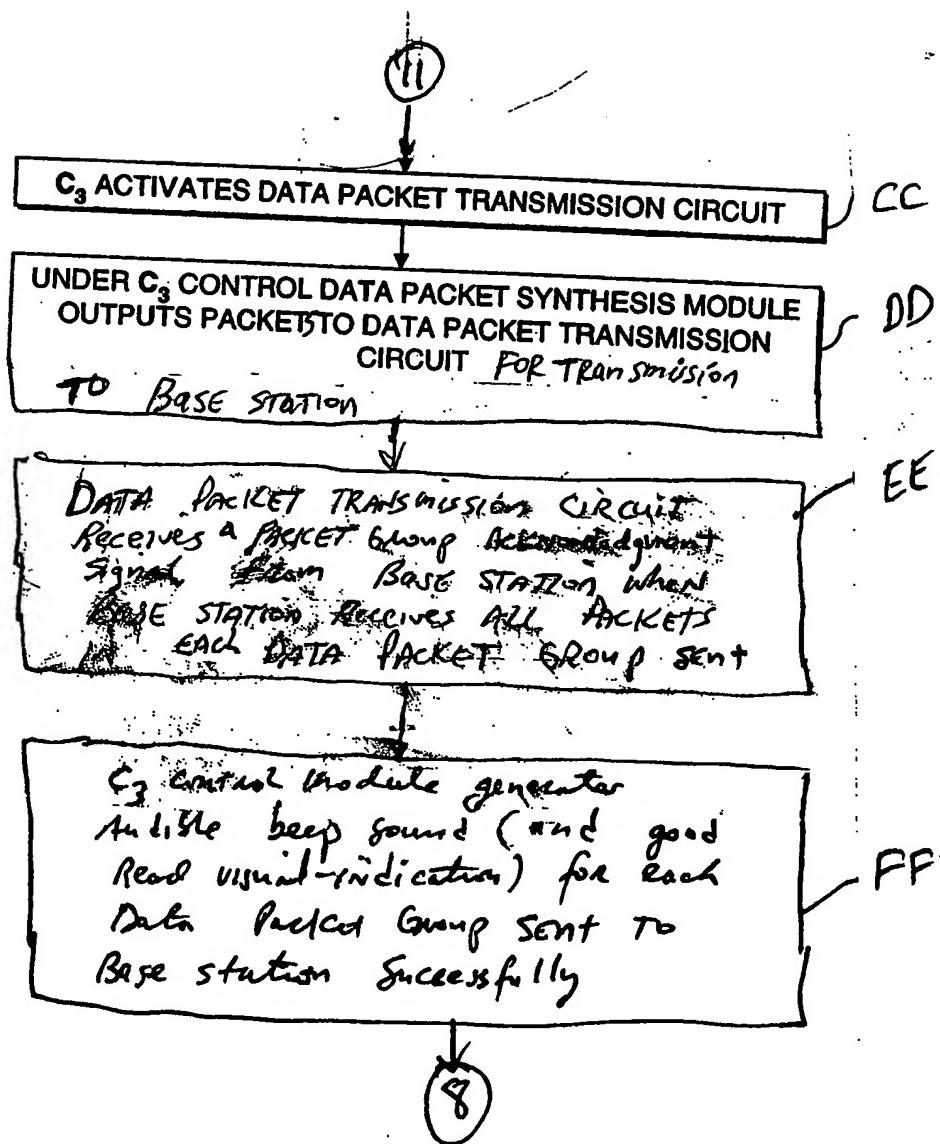


FIG. 46 C 3

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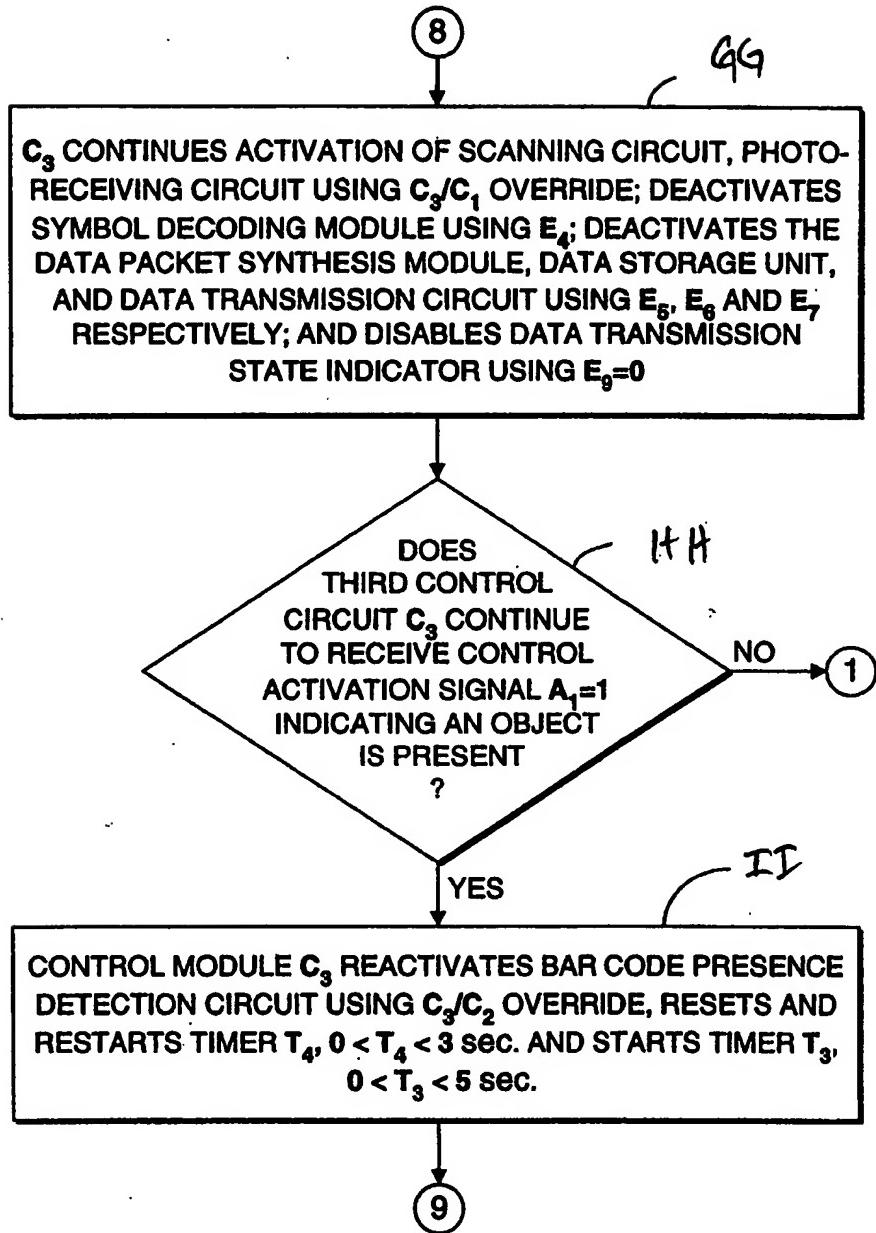


FIG 46 C4

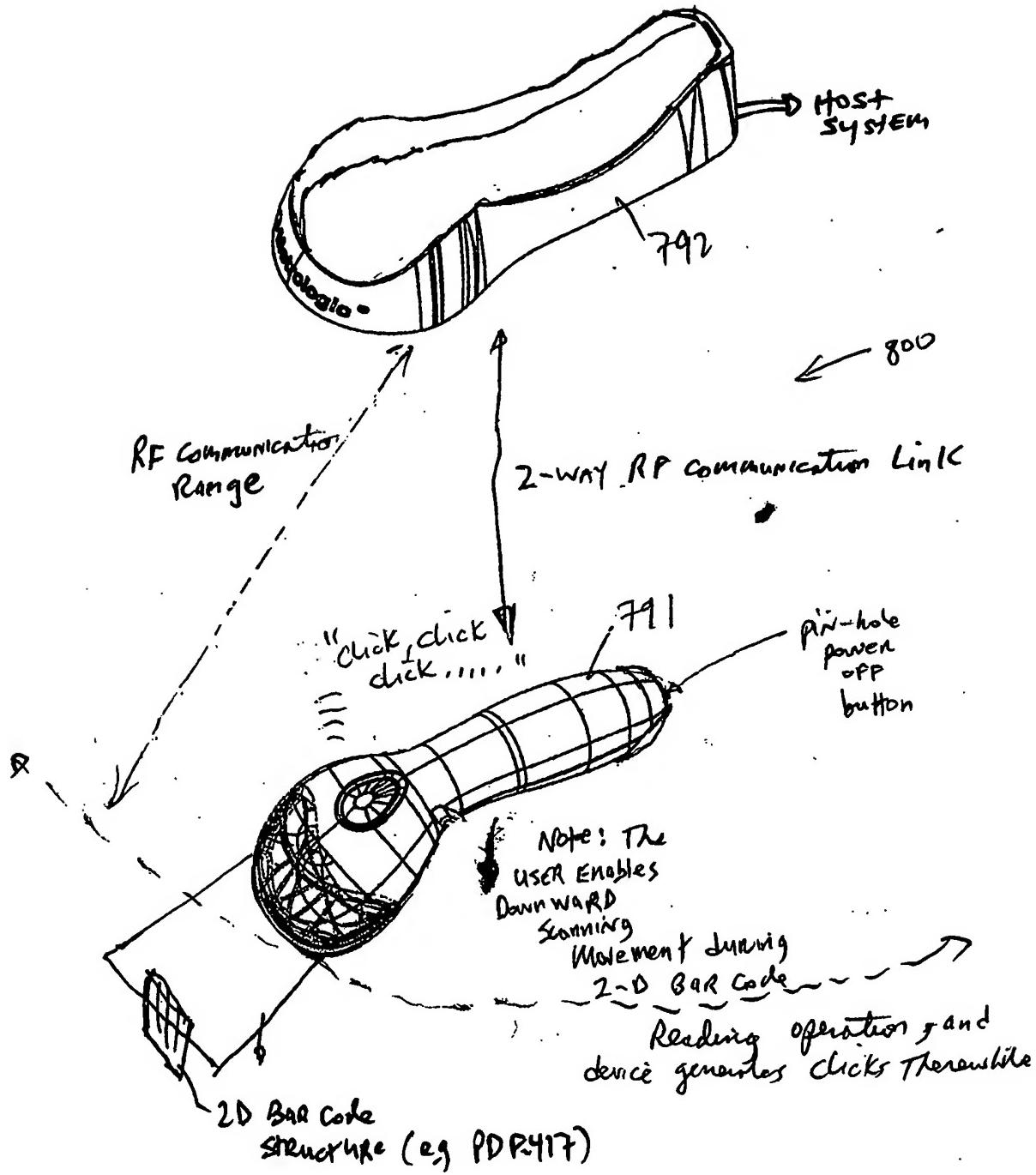
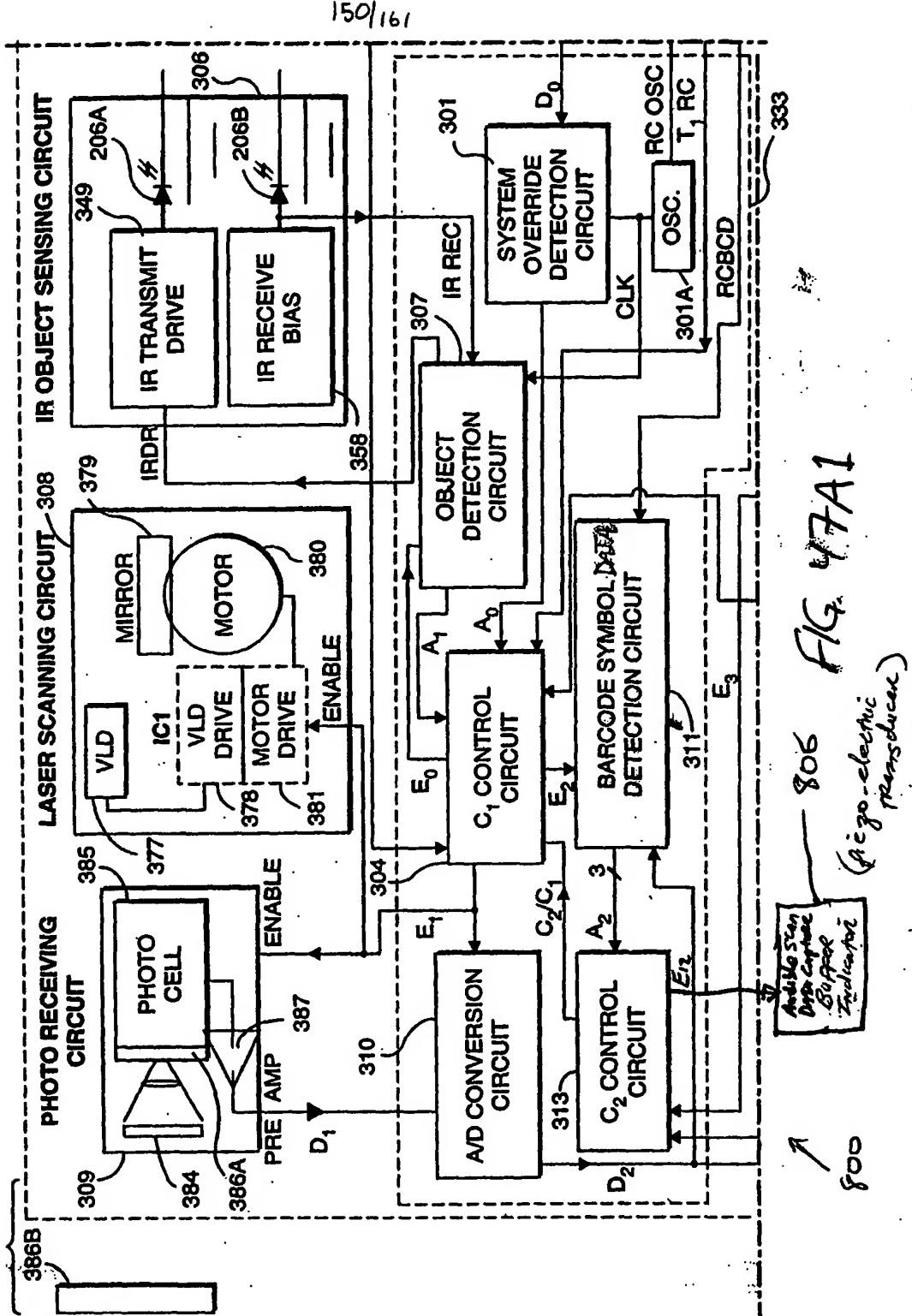


FIG. 47



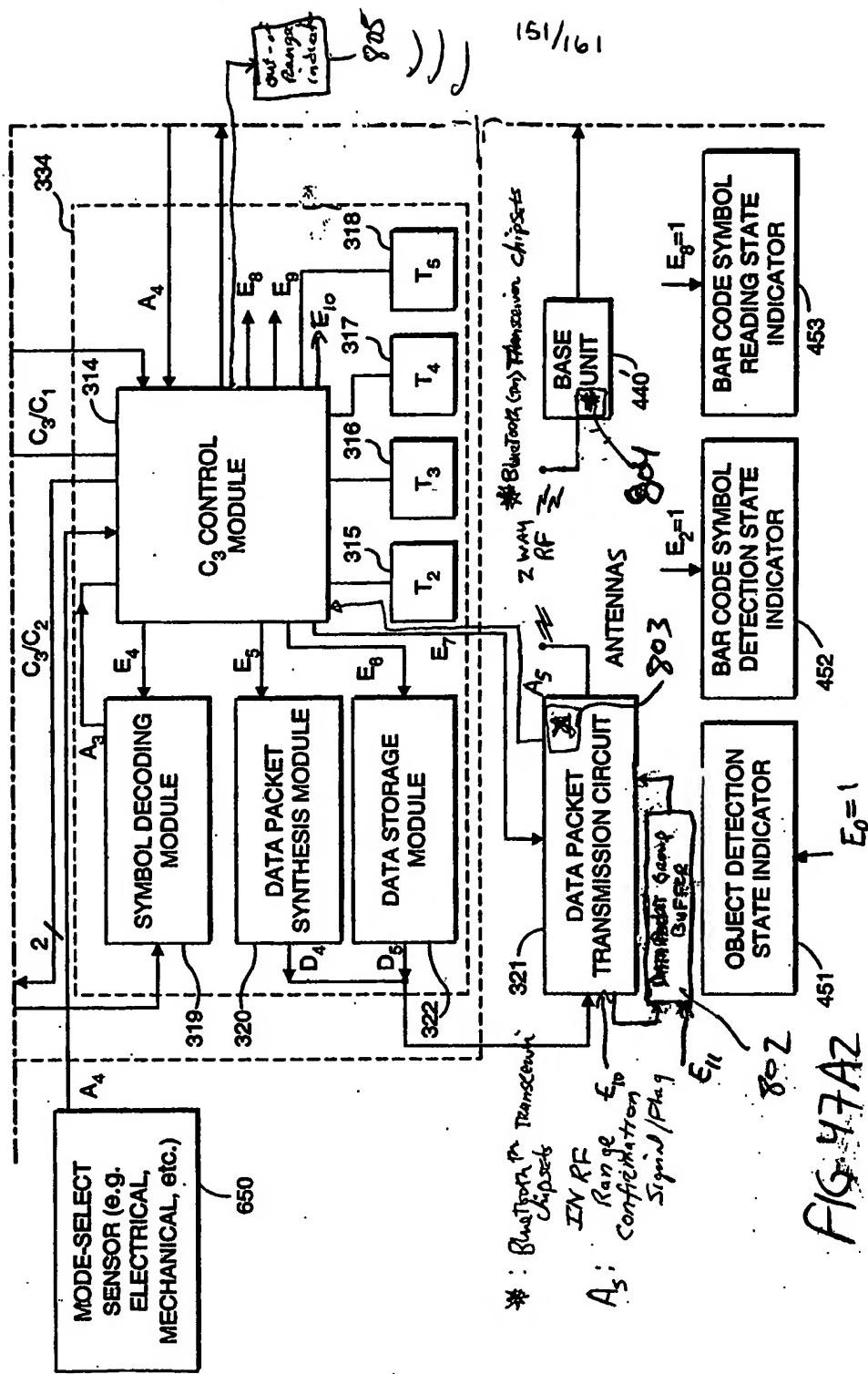
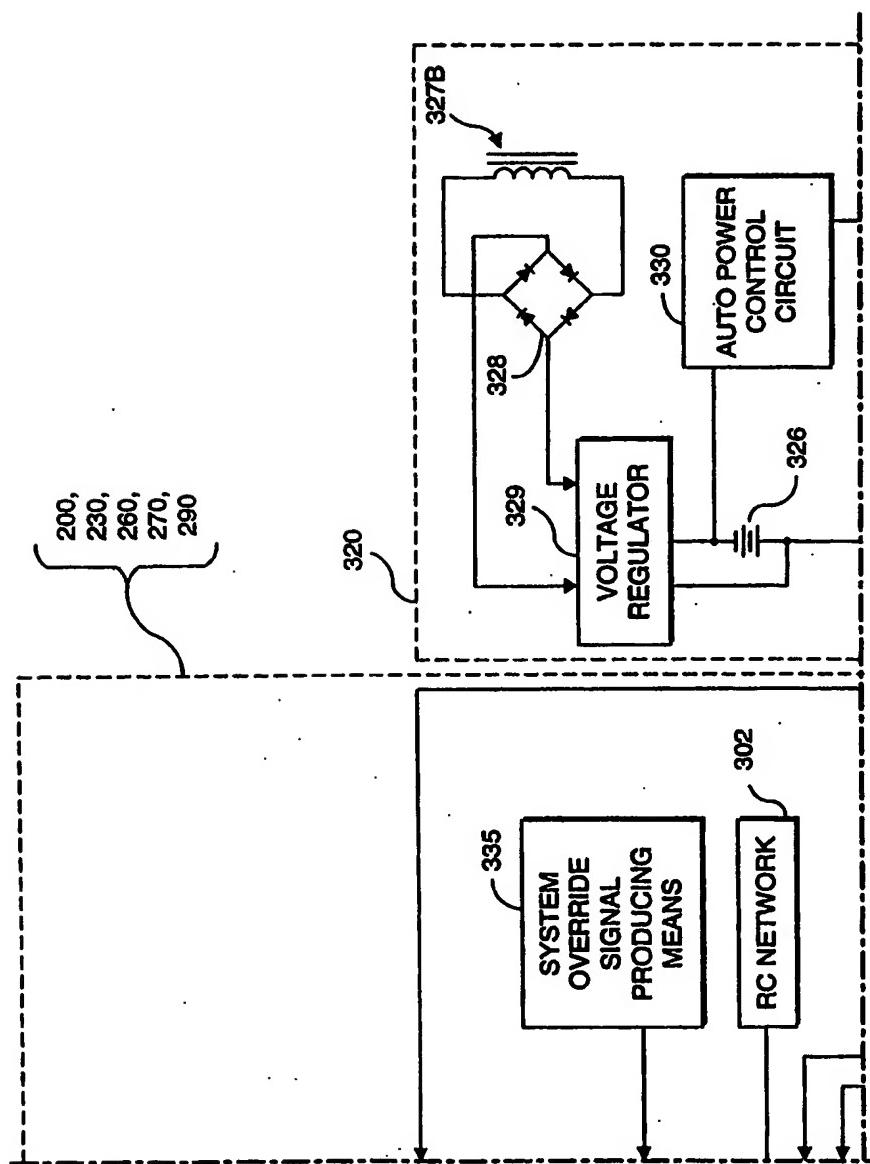


FIG U7A3

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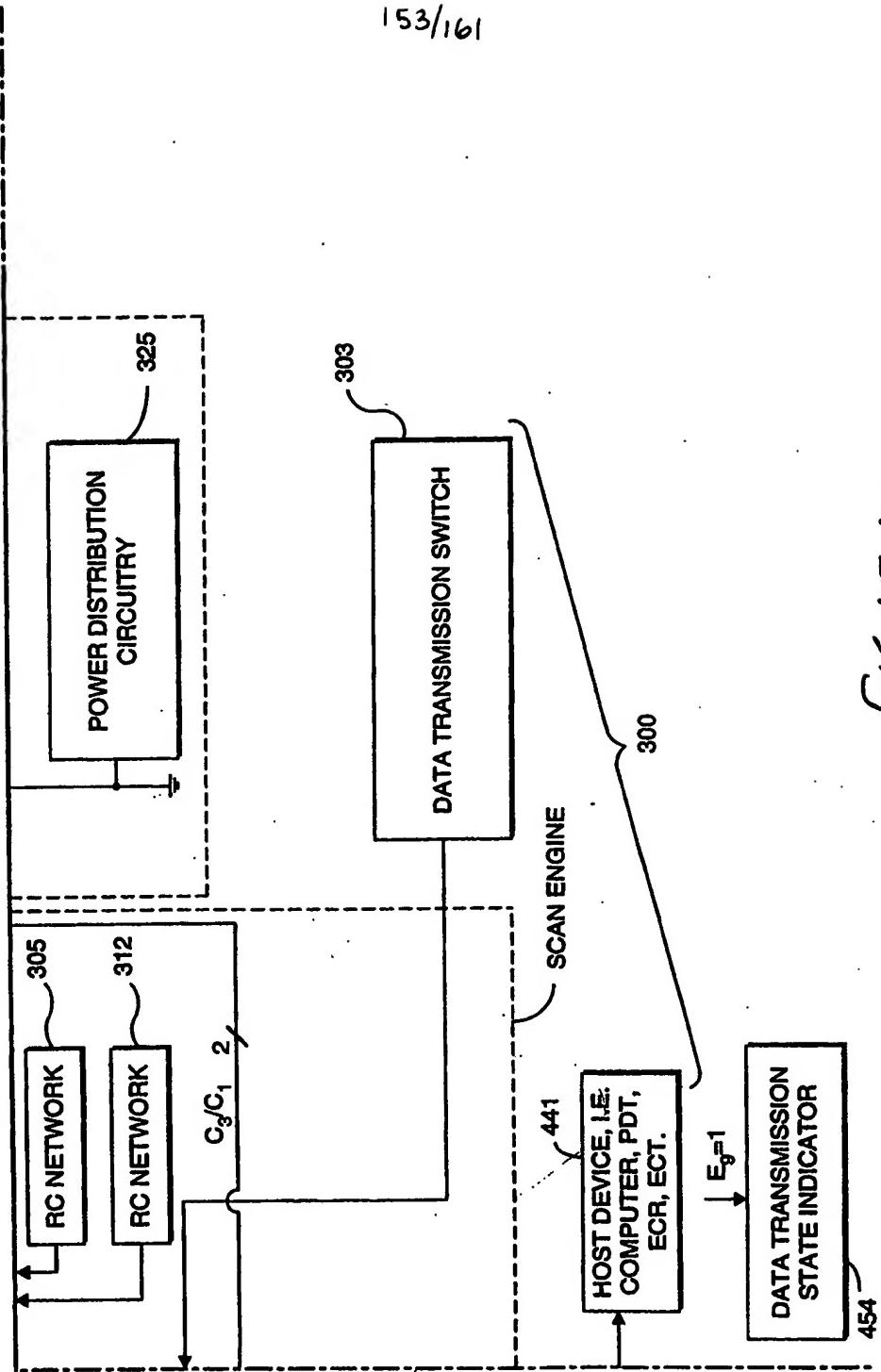


FIG. 47A4

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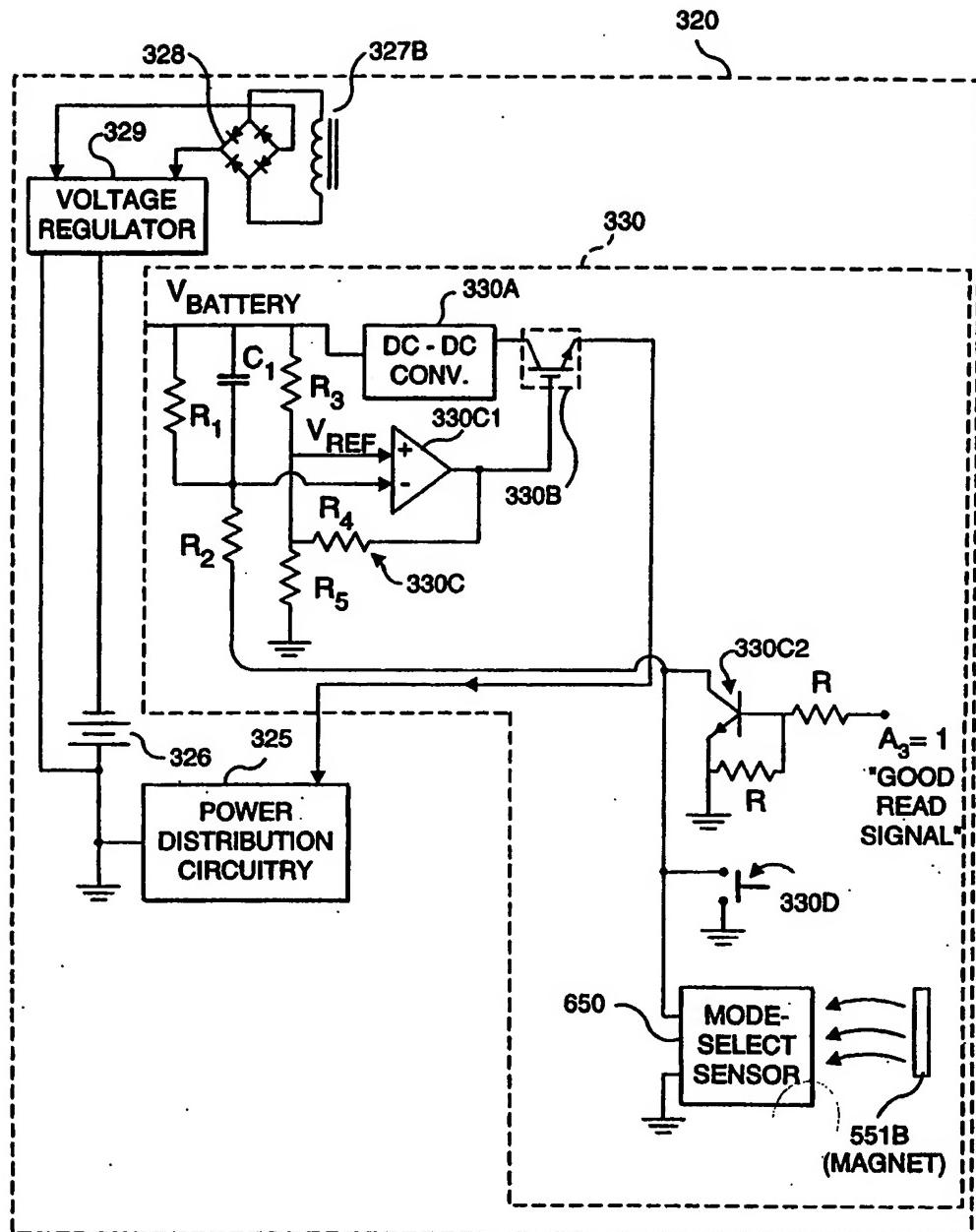


FIG. 47B

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PDF DATA Packet  
Transmission via  
2-WAY RF WITH Automatic  
RP-Range Dependent  
Control  
(2-D Reading  
Mode)

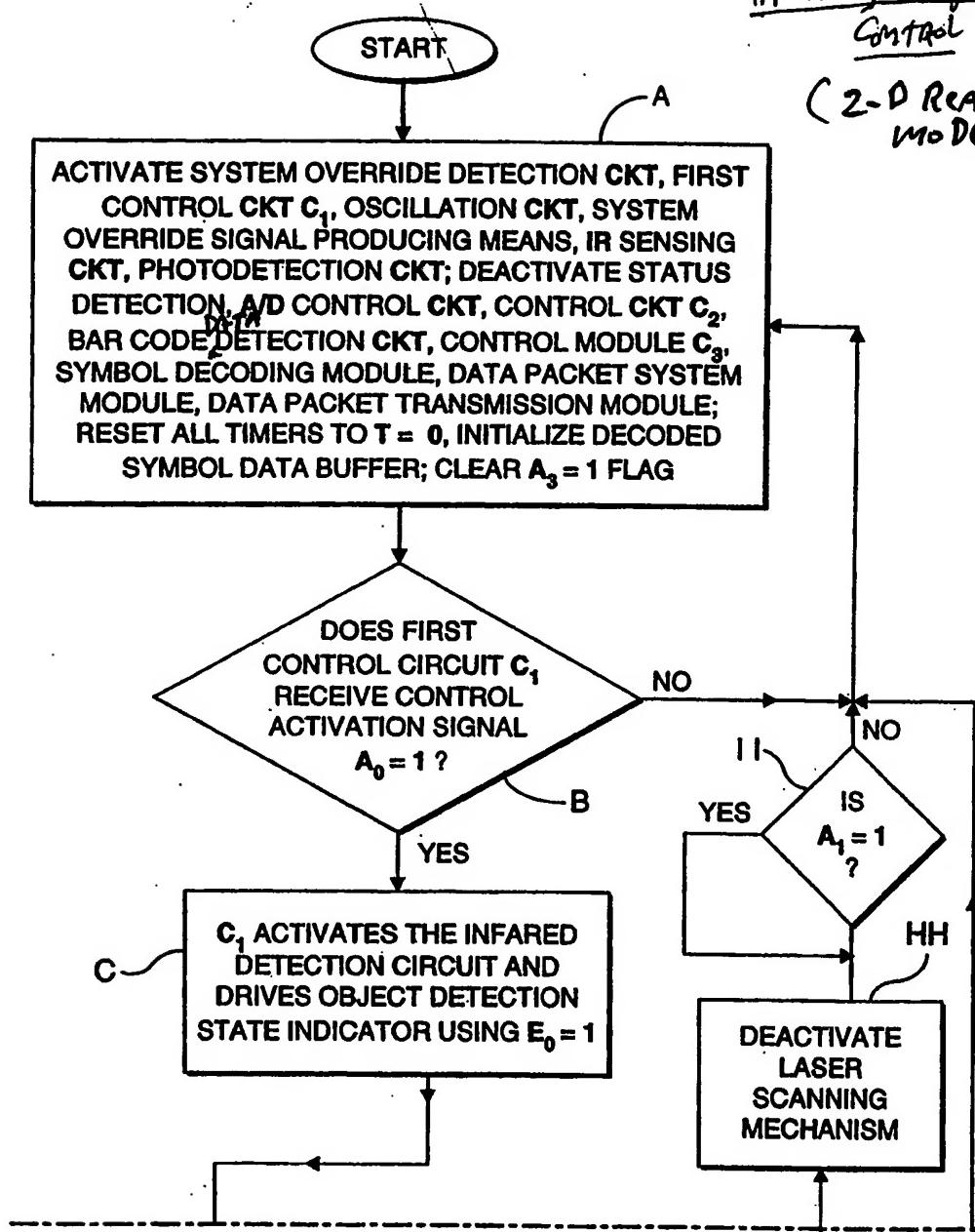


FIG. 48A(

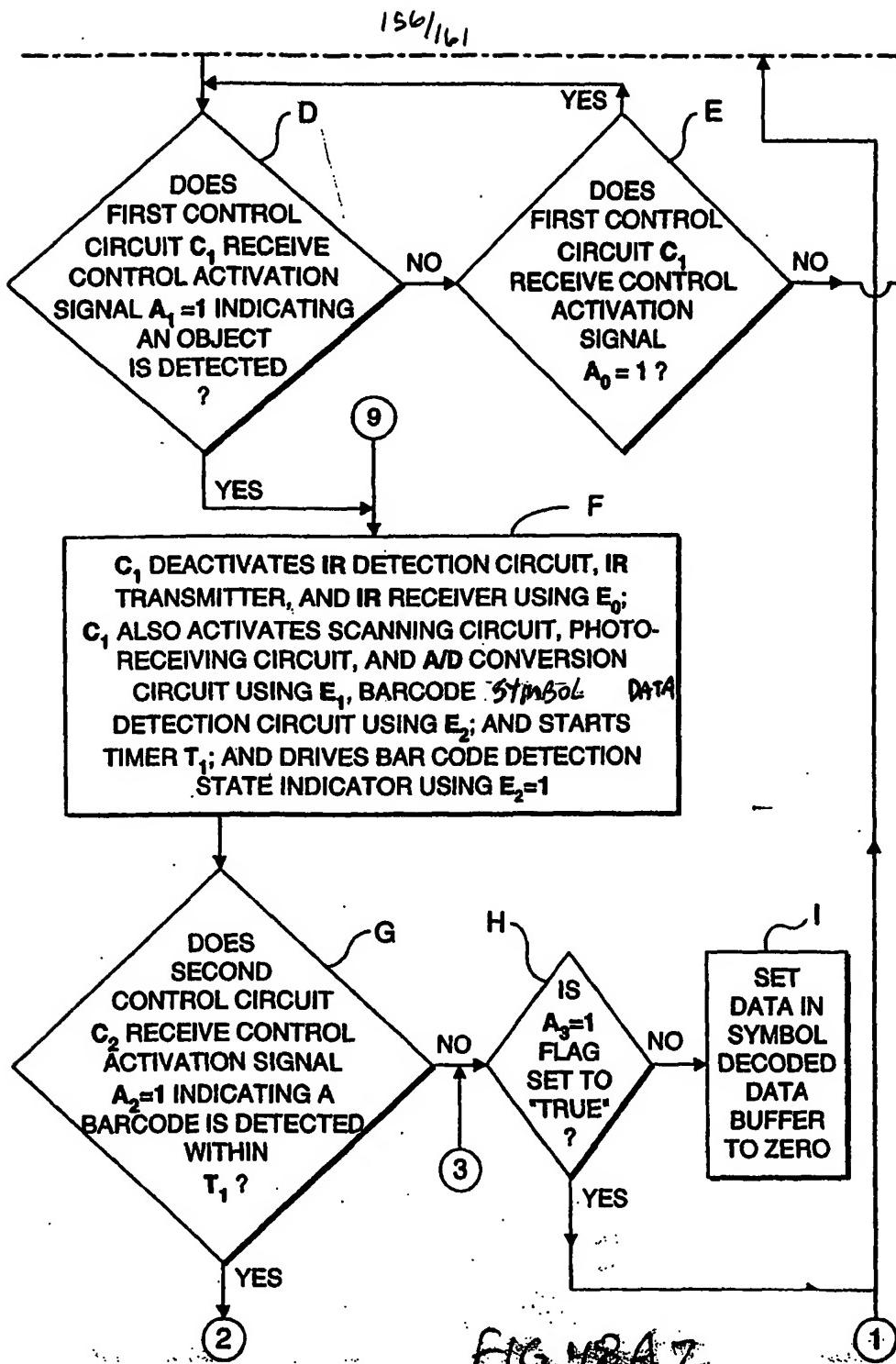


FIG. M2A2

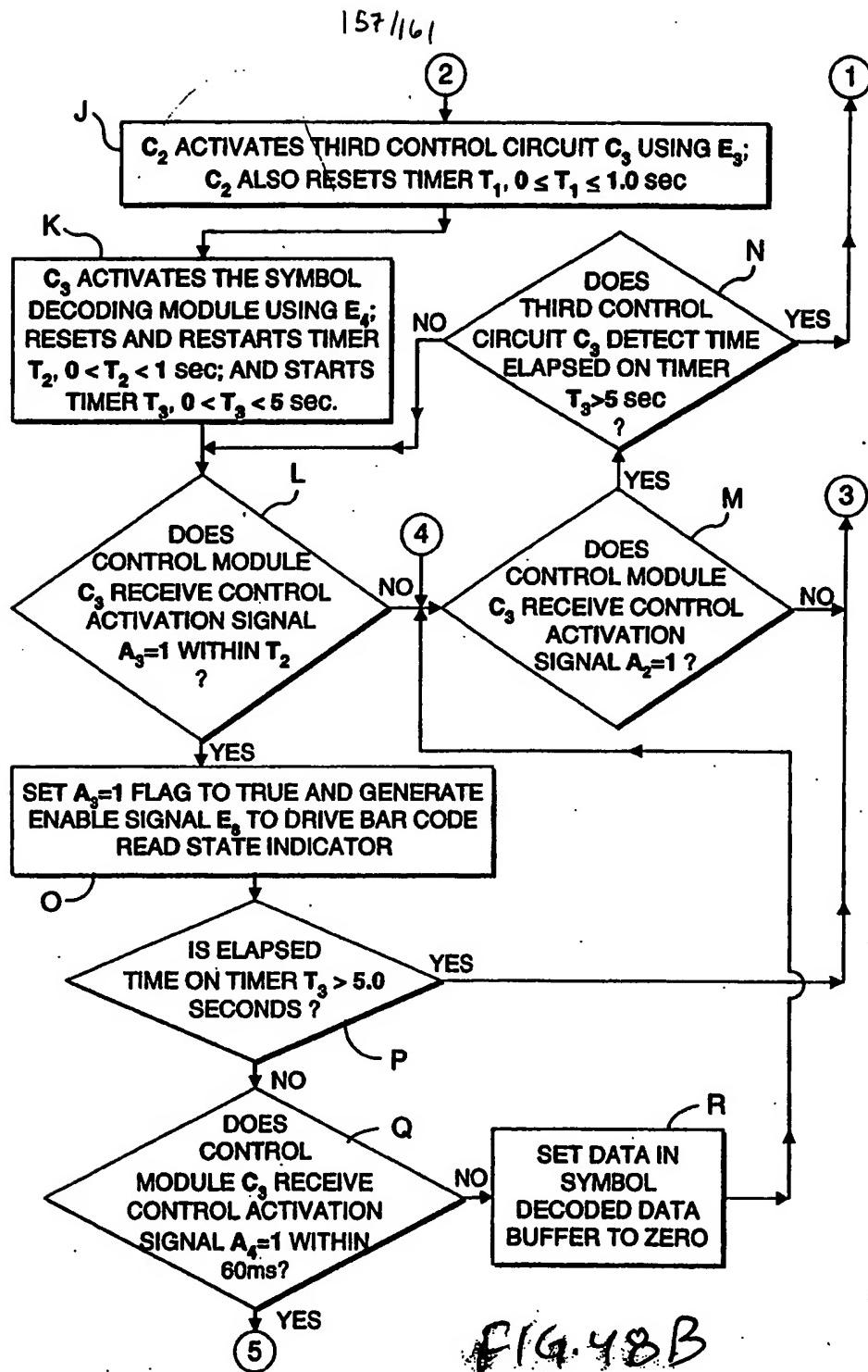


FIG. 48B

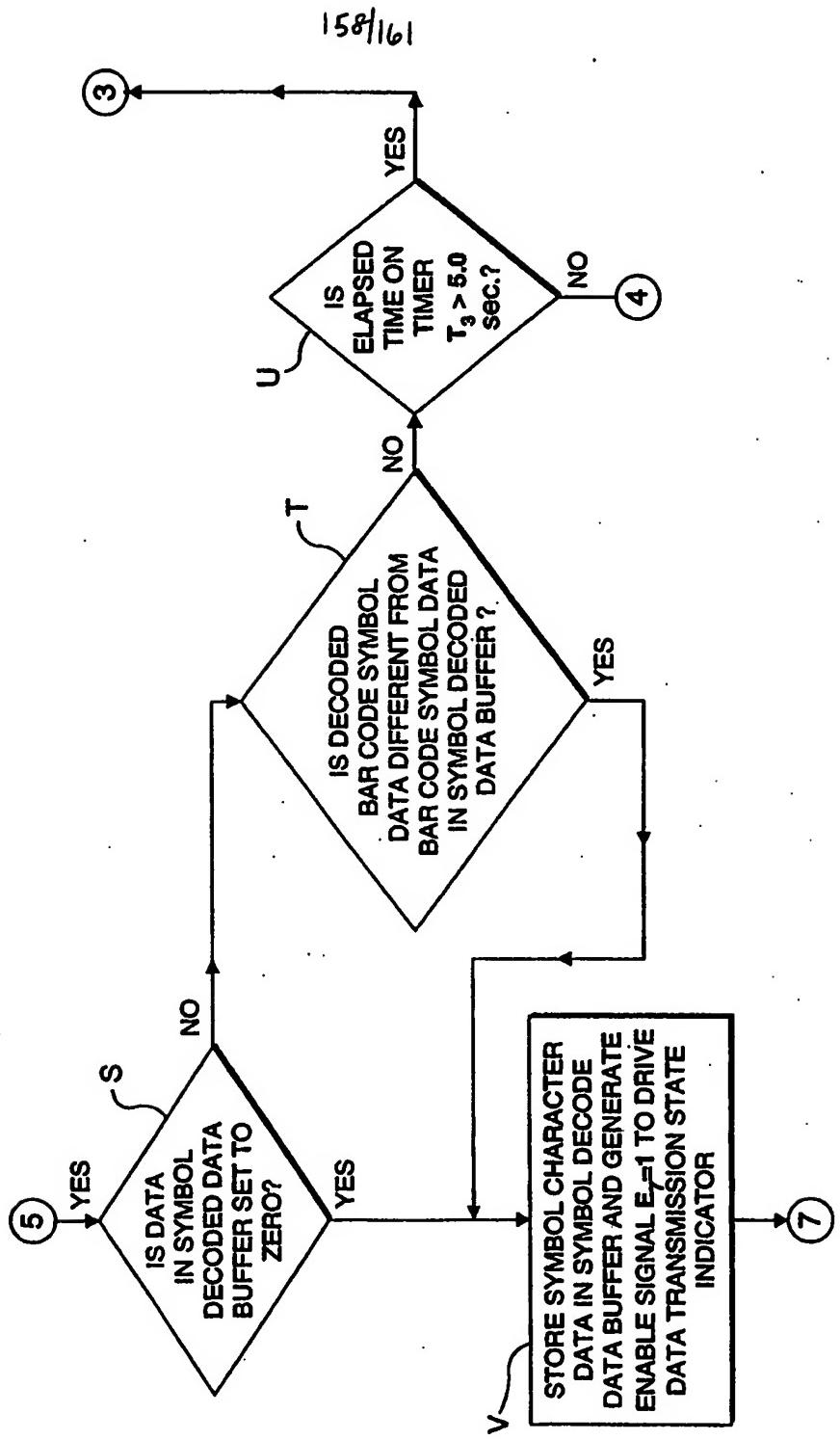


Fig. 48c1

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7

THIRD CONTROL CIRCUIT  $C_3$  CONTINUES ACTIVATION OF LASER DIODE, SCANNING MOTOR, PHOTORECEIVING CIRCUIT, A/D CONVERSION CIRCUIT; DEACTIVATES SYMBOL DECODING MODULE; AND COMMENCES ACTIVATION DATA PACKET SYNTHESIS MODULE

W

UNDER  $C_3$  CONTROL, DATA PACKET SYNTHESIS MODULE CONSTRUCTS DATA PACKET CONSISTING OF SYMBOL CHARACTER DATA, TRANSMITTER NUMBER, DATA PACKET GROUP NUMBER, CHECK CHARACTER AND FRAMING CHARACTERS

X

IS IN-RF RANGE  
CONFIRMATION Signal  
 $A_5=1$  ?

ND

YES

ARE  
DATA PACKET  
GROUP(S) STORED  
IN DATA PACKET  
GROUP BUFFER

NO

YES

$C_3$  Control Module Generates Enable Signal  $E_{11}=1$   
Reloading Buffered Data Packet Group B  
into Data Packet Transmission Circuit

AA

Control Module  $C_3$  Generates Enable  
Signal  $E_{12}=1$  loading Currently  
Synthesized Data packet Group into  
Data packet transmission circuit

BB

11

FIG. 48C2

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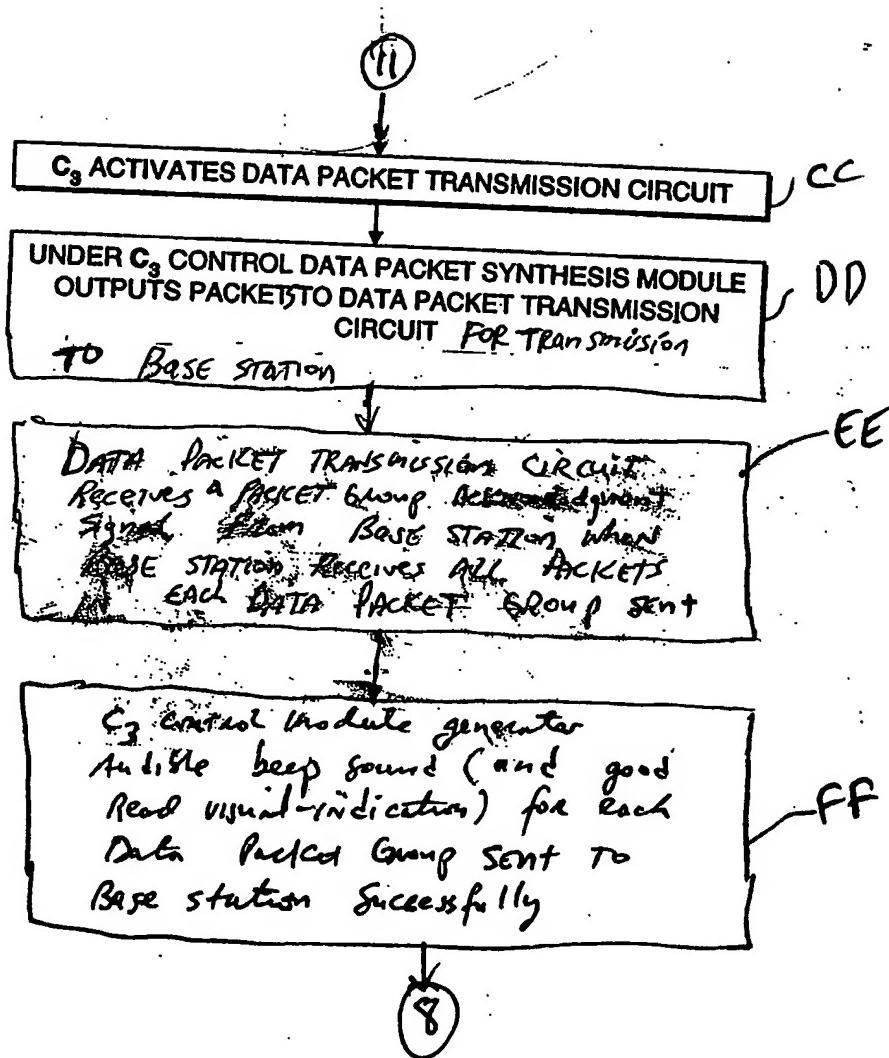


FIG. 48C3

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**C<sub>3</sub> CONTINUES ACTIVATION OF SCANNING CIRCUIT, PHOTO-RECEIVING CIRCUIT USING C<sub>3</sub>/C<sub>1</sub> OVERRIDE; DEACTIVATES SYMBOL DECODING MODULE USING E<sub>4</sub>; DEACTIVATES THE DATA PACKET SYNTHESIS MODULE, DATA STORAGE UNIT, AND DATA TRANSMISSION CIRCUIT USING E<sub>5</sub>, E<sub>6</sub> AND E<sub>7</sub>, RESPECTIVELY; AND DISABLES DATA TRANSMISSION STATE INDICATOR USING E<sub>8</sub>=0**

DOES  
THIRD CONTROL  
CIRCUIT C<sub>3</sub> CONTINUE  
TO RECEIVE CONTROL  
ACTIVATION SIGNAL A<sub>1</sub>=1  
INDICATING AN OBJECT  
IS PRESENT  
?

44

NO

1

YES

II

**CONTROL MODULE C<sub>3</sub> REACTIVATES BAR CODE PRESENCE  
DETECTION CIRCUIT USING C<sub>3</sub>/C<sub>2</sub> OVERRIDE, RESETS AND  
RESTARTS TIMER T<sub>4</sub>, 0 < T<sub>4</sub> < 3 sec. AND STARTS TIMER T<sub>3</sub>,  
0 < T<sub>3</sub> < 5 sec.**

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FIG. 48C4